The Journal of the American Medical Association

VOL. XXVII. CHICAGO, ILL., AUGUST 8, 1896. No. 6.

ADDRESS.

CHAIRMAN'S ADDRESS.

Delivered in the Section on State Medicine, at the Forty-Seventh Annual Meeting of the American Medical Association at Atlanta, Ga., May 5-8, 1896.

BY CHARLES H. SHEPARD, M.D.

BROOKLYN, N. Y.

Fellow Members:—It was both with diffidence and reluctance that I accepted the honor and obligations of the chairmanship of this Section, a place which has been held by some of the most distinguished and gifted members of the AMERICAN MEDICAL ASSOCIATION, and for the time being I rely upon your patience and generosity.

The amount of useful information that has been diffused from this Section since it was first organized, has been possible only by the indomitable energy and self-sacrificing work of those who have labored in its field. They have plowed and sowed, and while we gather the fruit of their labors, it is also incumbent upon us to do our share in the promotion of the work.

Unfortunately, outside of the medical profession, but comparatively few minds are possessed of a practical knowledge of sanitary matters. Hence the necessity of continually reiterating and disseminating what many of us consider the most commonplace truths, until their full acceptance shall render our land a sanitary Eden.

The healing of disease is a most noble work and worthy of all praise, but he who teaches how to prevent disease is engaged in a higher and holier cause. It is not a question of how far it is well to go in destroying one's own business, for the lover of his race realizes that his own higher interests are bound up with the welfare of the people. We are now in the kindergarten state of knowledge regarding many of the most important sciences that bear upon the prevention of disease. Far reaching as recent developments appear to be, the glory of those yet to come will undoubtedly cast them into the shade in the not distant future. It is a matter for which to be thankful that one is able to devote a life to the advancement of ideas that may prove of incalculable benefit to mankind.

The ideal physician would be the State physician, whose position and income assured, would enable him to devote his entire time and best powers in seeking the highest interests of the community in the prevention of disease.

For ages men have sought for a panacea. New remedies become candidates for public favor with surprising rapidity, and are popular for a time, only to be displaced by a new candidate. Strive as we may, we are convinced that never will a remedy be found to obviate the penalty sure to be exacted by violated law. Preventive medicine will teach people how to live, and then ignorance and panaceas will die a natural death. This is worthy of the earnest attention of the ablest minds, and will produce most important results. The loss of time on mere effects, instead of the original causes of disease, is like giving attention to the branches, instead of striking at the root of the deadly upas tree.

The first work on preventive medicine was furnished us by Moses, the great lawgiver, nor has it yet been surpassed by any modern discoveries. Granting all that is claimed for antitoxins of various kinds, and for vaccination as a preventive of smallpox, these are but so many milestones in the progress of preventive medicine, which shall yet lead to the cause of the original disturbance. Diphtheria, scarlet fever, etc., are filth diseases, and smallpox belongs preëminently to this class. Preventive medicine, with the aid of personal hygiene, will yet enable us to avoid all filth diseases of whatever kind.

As Rome carried civilization with her conquests, so shall preventive medicine, and this Section, as its representative in the AMERICAN MEDICAL ASSOCIATION, continue to diffuse a saving knowledge of human live in its all-conquering march.

It is well to look back occasionally, in order to measure our progress. Among the subjects which have been advocated by this Section were soil drainage and improved systems of sewerage, the better housing of the poor in our cities, the registration of vital statistics, civic cleanliness, quarantine reform and, more recently, improved pavements and public baths.

History tells us that sanitary measures, methodically carried out, are invariably followed by improved public health and a decreased death rate. But for the important sanitary measures carried out by the rulers of Rome, the eternal city would never have become the mistress of the world. Had it not been thoroughly drained, a large part of it would have been uninhabitable. The sanitary works of Rome, introduced when she was at the acme of her glory, have been a model for ages past, and will so continue for ages to come. Her enormous aqueducts, particularly those built by Agrippa, were virtual rivers brought into the city to flush the streets and sewers, and to supply all public and private requirements.

Before the streets of London were paved the inhabitants were as great sufferers from periodic fevers as are those of the most unhealthful rural districts in our own country. It has been computed by an eminent authority, Sir Lyon Playfair, that in one county alone in England, the pecuniary burden borne by the community in the support of removable disease and death, amounted to the annual sum of twenty-five millions of dollars.

After the paving of Dijon, the ancient capital of Burgundy, in the middle of the fourteenth century, dysentery, spotted fever and other diseases, became of less frequent occurrence in that city.

The evils of a certain form of modern architecture in our cities is a growing one that should be thoughtfully considered. The crowding together of tall buildings, necessarily depriving the lower floors of proper sunlight and ventilation, is one of the modern aggressions that is not of unmixed benefit, even in a business sense, involving the health of the occupants of all such buildings. The deficiency of sunlight and insufficient ventilation common to these structures, seriously affects the eyesight of multitudes, and the depressing effect of confinement and labor in the vitiated atmosphere, under such circumstances, render the occupants fit subjects of temptation in the shape of tobacco and other narcotics to satisfy the craving for the absence of the healthful stimuli of fresh air and light and thus render them liable to disease in every shape. The height of buildings should be in proportion to the width of the street. As a prominent and conscientious architect, Ernest Flagg, has well said in the May number of the Cosmopolitan: "It is best in this matter to place a curb upon private greed for the public good."

The disposal of the sewage of cities is a subject that is demanding more and more attention, for what now goes to waste, to the pollution of rivers and obstruction of harbors is a menace to health, besides being a pecuniary loss to the community. Sewage should instead be so disposed of as to be devoid of danger, and a profit to the city.

From its noiselessness, cleanliness and consequent comfort, the improvement of street pavements by the use of asphalt is intimately related to the health of the community, and this was strongly urged by Dr. Bell, in the *Sanitarian*, over thirteen years ago. It is now rapidly growing in favor, and making way for the horseless carriage which is to banish to the country districts the horse and his insanitary surroundings.

It is proper here to refer to the *Sanitarian*, the first journal in this country devoted to sanitary subjects, as the source from which I have been able to glean many facts on the progress and present status of preventive medicine in the United States, and also to the editor who projected that periodical in the same year that this Section was organized, and of which he was the first chairman twenty-three ago. This publication presents essays by the most distinguished sanitary authorities on a great variety of subjects, and the gist of sanitary medicine in all its phases.

Dr. Bell's activity as a sanitary reformer prevented the yellow fever from reaching the city of Brooklyn from Bay Ridge and Fort Hamilton in 1856. He fought against the quarantine system as it then obtained, and succeeded in reforming it on the basis of the regulations which he devised and reported to the National Sanitary Convention in Boston, in 1860. He devised measures in detail relating to departure, as the primary means of preventing the conveyance of infectious diseases from one place to another, and their introduction into new places. Moreover he instituted and successfully practiced, under the auspices of the National Board of Health, measures which prevented the yellow fever from being conveyed to other places from New Orleans, in 1879, without restricting commerce, and with the result of raising all the quarantines against that city within six weeks.

In a contribution to the Report of the New York Board of Charities for the year 1876, on the "Relation of Insanitary Conditions to Pauperism, Vice and Crime in New York," Dr. Bell suggested a mandatory law requiring assessment, seizure and destruction, at public expense, of a stated few of the worst tenement houses in the city and the conversion of their sites into grass plots, annually, as an efficient means of reform; means that would not only weed out the worst from year to year, but continually promote the improvement of the remainder, whose proprietors would not allow them to be destroyed, and the legislature has recently conferred the power of so doing, in a modified form, on the health authorities.

Municipal sanitation in New York and Brooklyn on a scientific basis, began thirty years ago, under the auspices of the Metropolitan Board of Health. The average death rate in New York, per 1,000 of the population, for the ten years preceding that date was 33.39; for the first ten years following it was 29.70; for the ten years ending December 31, 1894, it was 25.48. The death rate for 1895, according to the last report from the State Board of Health, was 18.25 per 1,000. Surely it would be difficult to find more significant results of practical sanitation equivalent to saving of about eight lives per 1,000 of the population, annually, and amounting in the aggregate, measured by the present population and death rate, to 14,464 lives annually.

One of the most imperative necessities for preserving the public health is an ample supply of pure water, and it is to be hoped that some better medium than lead pipe will soon be found for conveying drinking water through our houses. The more pure the water the more it acts on the lead to absorb the poison, and therefore it becomes the more dangerous. Possibly aluminum may come in to supply this pressing need.

The character of the public water supply is the first and chief concern of every intelligent sanitarian, for in that lurks the means of transmission of all the most virulent and fatal of the infectious diseases. As population increases the sources of contamination multiply and it becomes more and more difficult to secure an abundant supply of pure water. Rain water falling upon the earth's surface becomes more or less contaminated from the soil, with mineral matters, which it holds in solution, and should be used with caution. The home of the most deadly of the microscopic enemies of man is water. Many of the epidemics that have desolated different countries have been caused by the use of impure water. Cholera, typhoid fever and dysentery are fostered and disseminated almost exclusively through the medium of drinking water.

While the use of water ranks high as a remedy for many diseases, its greatest value is in the prevention of disease. Never was the true theory of disease understood until it was put forth by the advocates of the hygienic system of treatment, otherwise called water cure, which was very popular about the middle of this century. While not now conspicuously prominent as a separate system it has had a powerful influence in modifying the practice of all the other schools. Disease was known only by its phenomena and medicines by their effects. The true definition of disease is remedial effort, an action to cast out impurities. It wastes vital power, as a man would expend his strength to eject a thief from his premises. When people understand that disease is a vital struggle in self defense they will cease to fear it. They will fear only

its causes and instead of trying to suppress the symptoms will endeavor to remove the causes. Disease and the *vis medicatrix naturæ* are one and the same thing. When in the progress of knowledge it comes to be understood that in all relations between living and dead matter, the dead is passive and the living active, then the application of this truth to foods, remedies and poisons will settle many vexed questions and place mankind on the high road to perfect health.

It would be a profitable investment for any city which is suffering by reason of a polluted water supply to expend all the money that may be required for the substitution of a wholesome supply, either by going to new sources or by purifying the supply on hand. This can be demonstrated easily by figures that men of ordinary intelligence would be obliged to accept. The loss to several cities throughout our land from typhoid fever during the past year which has been traced to the water supply has emphasized this fact. A few of the cities have taken up the work of purifying their water by filtration, and in every case the decrease in the death rate has been most satisfactory and warranted all the outlay. This is a work that should be carried out by the cities in their corporate capacity rather than left to private enterprise. Where all are to be benefited all should be interested.

It is but trite to say that the Section on State Medicine has a most comprehensive work on hand, including as it does, preventive medicine, public hygiene, public baths, street paving, together with cleanliness of the streets, disposal of the garbage, factory inspection, cattle inspection, milk inspection, employment of child labor, cremation, etc. I will trespass on your time only to refer to a few facts in preventive medicine.

The camera and the bicycle, by calling people out into the open air, and giving them pleasant occupation and mental stimulus, is doing more to prevent disease than all the doctors in the land. We may be very thankful for the sudden popularity of the bicycle, in that it has given a wonderful impetus to the question of good roads.

The blessings of sunlight and fresh air should be more appreciated. The sun is the godfather of us all. The source of all light, heat, electricity, and energy, what wonder that it was once worshipped as the Creator. The future will recognize it not only as the best disinfectant, an all powerful preventive of disease, but also as a wonderful healer of disease. The more people can be taught to live in pure air out of doors, and bask in the rays of the sun, the less of disease there will be to prevent.

The Women's Health Protective Association of Brooklyn, N. Y., is doing a most useful work by preventing litter in the streets, by burning of garbage, and more and above all by endeavoring to abate the nuisance of expectoration in the public streets and conveyances. When that is accomplished there will be less of disease floating in the air ready to be inhaled at every breath.

The study of the microscope is gaining new impetus every year and giving us more and better information in regard to the minutiæ of life. The knowledge of microbic life is so intensely attractive as to absorb the whole time of many students of eminent degree, and the wonderful results developed have many times astounded the world, and will in many ways help to prevent disease, by teaching us what to do in emergencies, and yet what is now known may be considered as but the forerunner of what is to come. New facts have been so rapidly developed as to dazzle the imagination with their possibilities.

Already have the X rays, lately discovered by Roentgen, produced a profound impression upon the public mind. The correct view of this new radiant energy will undoubtedly soon be formed, when new experimental data appear. In the meantime we can rest assurred that a new entrance to the region of the ether phenomena has been opened, and the importance of this fact can hardly be overestimated. It may be that the rays will be proved identical in kind with vibrations of light, heat, or electricity, already well known. It may be on the other hand, a new form of energy. It is easily possible that the new photography, when fully developed, may reveal to us secrets of cellular growth, glandular activity, and the like, that have hitherto proved inscrutable. The power of looking through a man, as reported by Mr. Edison, may yet lead to still greater discoveries in the prevention of disease.

No more desirable work has been done by any board of health than in looking after the adulteration of food, as in Ohio for instance. Of all the liars in existence, none are worse than those who advertise to furnish food or medicine and really deal out that which is bound to cause disease and leave ruin in its path. If there was a soul above filthy lucre in the patent medicine vender there would be none of this. To protect the ignorant public is the god-like mission of State medicine. But when we get pure food, much of it needs cooking, and cooking schools are immensely useful as a preventive of disease, not alone to prevent the waste of valuable portions, but also to be able to derive therefrom sound tissue for the building up of the entire man into his most vigorous condition.

The bad work that people make in dosing themselves with patent medicines, without a physician's prescription, is not unfrequently punctuated with a sudden death from overdosing with antipyrin, sulphonal, or some other coal-tar preparation. Children should not play with edge tools. The teachings of preventive medicine will do away with such work.

Another thing in which it is most desirable that the public should be enlightened, is the imperative need of rest, instead of what is called stimulation; that what are called tonics or stimulants are used only at a ruinous expense to the vitality, and if people would take time for recreation and recuperation, they would obviate the necessity for their use and prevent more disease than ever was cured.

If ever our people are to be redeemed from the thraldom and unmitigated and unlimited curse of tobacco using, it must come from the teachings of preventive medicine.

There is an immense amount of ignorance abroad in the community on the subject of health and the proper way of living to secure the best physical condition, and there is a corresponding need for instruction in such matters. That is why the charlatan has such free play in this country. One of the most important of all studies for old and young is that of personal hygiene. This it is that protects from personal contagion. This do and thou shalt live! That do and thy body shall become a fertile breeding ground for all manner of disease! The earlier in life this is recognized the more surely will success crown man's daily pursuits.

In fact, the very best preventive of all disease is a condition of well nourished physical purity, combined with a mental and bodily alertness that leads to the enjoyment of all good work. Such a one can walk through pestilence unharmed, will live out all his days, and, barring accidents, be gathered in when his full time shall have come, like a shock of corn fully ripened.

The delights of mental pursuits, in calling its devotee out of himself to the attainment of certain truths or facts and the vantage ground gained by every such conquest, giving broader field and more expansive view with intensified joys, place mental pursuits among the more desirable means for preventing disease and prolonging life.

The multiplication of intellectual entertainments and resources, that give the people something to think about and occupy their minds to the exclusion of things of a lower grade, is to be welcomed by all who place a higher faith in prevention than in cure. We very well know that if we can fill the minds of the young with the good, there will be no room for the bad.

Laugh as we may at the vagaries of the teacher of what is called mental science, there is a germ of truth at the foundation of it all. The mind reacts upon the body as well as the body upon the mind. We can magnify or minify our troubles; therefore if weak and delicate invalids can be made to believe that they are to get well, they are thereby in a better condition to become well. So also with one who girds himself up to face disease and disaster. He is by so much less liable to the disease or disaster, and should it overtake him he is better fitted to cope with the emergency.

The little that has been accomplished is but the forerunner of what is to come. The time is not far distant when the people will demand that all these desiderata shall be taken up in a manner commensurate with their importance, and then public baths will be made as free to the people as the postoffice and the public school. Good roads will be uniformly extended throughout our country, and kept in proper condition. Dwelling houses, and business houses as well, will receive their full modicum of sunlight and ventilation, pure water will abound, and excreta, along with garbage, will be disposed of with advantage to the community. Our public schools will be well lighted and ventilated, the children will be taught the evils of the indiscriminate use of narcotics of all kinds, and the pupils will not be overworked by a too cumbersome curriculum.

It will be a happier day for all when the people in their representative capacity shall take charge of all vagrancy, see that all who can labor shall have the opportunity, and those who are disabled properly cared for. This also is preventive medicine, and is but coöperation, wherein the people shall demand reforms to be carried out by the government, which is, or should be, but the expression of the will of the people. Thus will state medicine fulfill its highest duties. By some this might be called socialism, but the whole world is traveling that road. Our AMERICAN MEDICAL ASSOCIATION is but a step in coöperation by liberal minded men, lifting us for the time being out of the slough of competition, and our Section on State Medicine is preëminently socialistic in that it seeks the benefit of the mass through the power derived from the people in their collective capacity.

If ever legislation regarding public questions shall be elevated above the plane of practical politics or personal gain, we may obtain some results that will help to promote the best interests of the community, instead of, as at present, being made the foot-ball of conflicting parties.

Let us bear in mind that we are responsible for this condition of things, that it is every physician's duty to take an active and intelligent part in all political matters, and not leave them to the ignorant and vicious. When this is thoroughly carried out, and direct legislation comes in, a new era will be inaugurated.

A bill has been introduced in the Senate, creating a new cabinet officer who shall be known as Secretary of Manufactures and Commerce, and certainly this is of great importance to all of our industries, but of still greater importance would be a Secretary of Public Health, for if the health of the community is not assured, the industries are of small account.

While State medicine has saved the world from an immense amount of charlatanism and superstition regarding avoidable disease, there are larger fields and higher ground waiting for occupancy by the interested students who are to bless the community by their new discoveries. The range is too vast for any one department, but all will combine in this, that their work shall bless and lengthen the days of man, for all the achievements of the true physician are the common heritage of mankind, and thus is he to become one of the most potent of all the civilizing agencies of the future. This forward march is to go on, and blessed are we who are permitted to take part in the work, insignificant though that part may be.

During the past year the harvest of death has been very great in the ranks of medical men, particularly among the younger members, leaving gaps that will be hard to fill. The demands of modern society are too exacting, and the results of the pace that kills are sometimes realized too late. From out of our own ranks have gone Dr. Joseph Jones of New Orleans, Dr. James E. Reeve of Chattanooga, Tenn., and Dr. C. G. Comegys of Cincinnati, Ohio. They rest from their labors, and we shall see them no more, but the bright example of their noble work will remain to bless all the land.

Gentlemen, I am proud that you have thought me worthy to assist in your deliberations, and shall enter upon the duties of our session with an earnest desire to forward the good work.

Hopefully then, do I commit to your hands the pleasant task of spreading over this vast country the ennobling light of your wisdom and experience.

Excessive Doses of Bicarbonate of Sodium in Hyperacidity of the Stomach.—Tournier relates a couple of cases of intense gastric pain caused by hyperacidity, relieved by large doses of bicarbonate of sodium, with no accompanying inconveniences. The amount prescribed was 20 to 30 grams a day, which the patients increased to 60 and 65 grams, before obtaining permanent relief. The male patient continued these large doses for two to three years, securing a permanent cure, with no return of the gastralgia in the four years since. The other case was a young woman, who took at last 60 to 65 grams for a month, with the result of much improved gastric conditions and a gain of three kilograms in weight. She took the soda in a powder every half hour, followed each time with a little milk, of which she carried a small bottle with her when she left home. The elimination of chlorid of sodium in the urine amounted to 36 grams per liter, testifying to the actual transformation of the sodium in the organism.—*Province Médicale*, June 27.

ORIGINAL ARTICLES.

INTESTINAL OBSTRUCTION AFTER LAPAROTOMY.

Read in the Section on Obstetrics and Diseases of Women at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

BY HENRY O. MARCY, M.D., LL.D.

BOSTON, MASS.

The internal hernia, so-called by the early authors, possesses an entirely new and increased interest, since intestinal obstruction occurs more frequently than formerly, as a sequel to the surgical invasion of the abdominal cavity. I believe also that this is a far more common cause of death than usually supposed, since the success attending the surgery of the abdomen has emboldened many surgeons to undertake a great variety of operations, considered unwarranted a decade ago.

Before entering into any general discussion of the subject, it has seemed instructive to give a brief report of all the cases of intestinal obstruction following laparotomy, which have come under my observation.

Case 1.—Mrs. C., aged 31, married, has three children. April 14, 1890, I removed a dermoid cyst of the left ovary weighing eight pounds. Right ovary size of an egg, capsule thick and friable. Peritoneum covering pedicle parted easily under constriction of the suture. Marked nausea after etherization. The stump was touched with liquid carbolic acid and covered with iodoform. The uncovered peritoneum was scarcely larger than a split pea. Convalescence comfortable, with primary union of the abdominal wound, which was closed without drainage. Bowels moved the third day; kept open by saline laxatives. On the seventeenth day symptoms of intestinal obstruction supervened, with nausea and vomiting, slowly becoming more pronounced. On the twenty-second day it was evident that grave danger was imminent, every effort to evacuate the bowels having proved futile. Assisted by the late Dr. Trenholme of Montreal, I reopened the abdomen and found two loops of the lower portion of the small intestine firmly adherent to the stump of the right ovary. The adhesions were separated with difficulty. The intestines were not very much exposed, and yet the shock was very pronounced and for some hours danger of death seemed imminent. Convalescence was slow but satisfactory. The patient remains well up to the present, entirely free from abdominal pain.

Case 2.—Mrs. L., aged 35, married, has borne children. General health fair. On July 13, 1892, I performed vaginal hysterectomy for cancer. Operation less difficult than usual. The broad ligaments were constricted by clamps which were removed the second day. The third day nausea and vomiting supervened, rapid elevation of temperature and death occurred on the fifth day from intestinal obstruction, not clearly recognized until autopsy, since it was believed that septic peritonitis was in process of development. On examination it was found that a loop of the lower portion of the small intestine was adherent to the stump of the right broad ligament, but the lymph adhesion was easily separated. The intestine above was filled with a large quantity of dark-colored fetid fluid, and it is believed that the symptoms of septic poisoning came from the absorption of the products of decomposition of this fluid. There was no peritonitis and the pelvic wound was uninfected. The adhesions could have been easily freed by an abdominal section.

Case 3.—Mrs. C., aged 42. General health fairly good, although she had suffered long from pelvic troubles. Two years previous I had removed the right ovary, which was cystic, resulting in an adherent tumor cocoanut size. Recovery was rapid and uneventful. For six months prior to the second operation a cystic tumor of the left ovary had developed until it reached a point above the navel. Operation Nov. 28, 1892, Dr. James R. Chadwick present. The omentum was found somewhat adherent on the line of the old cicatrix. The tumor was removed with difficulty, owing to its being bound down by adhesions. Recovery from the operation was not satisfactory, shock pronounced and nausea persistent from the first. All the symptoms became slowly more aggravated, until at the end of the third day it was apparent that intestinal obstruction was threatening the life of the patient. Upon re-opening the abdomen a loop of small intentine was found constricted by an old omental band of adhesions upon the left side, just above the brim of the pelvis. It is very probable that the intestine became entangled at the time of operation. It was easily freed and the operation was completed in a short time, but the shock following was very pronounced, the patient never rallying from it, and death supervened in a few hours.

Case 4.—Mrs. G., aged 52. General health good. She had suffered severely from a rather rapidly growing multiple uterine myoma, which was impacted in the pelvic cavity and extended to the umbilicus. Operation Oct. 24, 1895, assisted by Drs. H. D. Didama, Syracuse, and D. T. Nelson, Chicago. The operation was not difficult, the most noteworthy feature being that a small firm lobe of the tumor was so fixed to the right lower vaginal cul-de-sac that upon removal the adjacent peritoneum, although not bleeding, was dotted with minute red points. At the time of operation it was remarked that such a condition of the pelvic peritoneum would favor intestinal adhesions. The tumor was dissected to the cervical neck, resected and the arteries separately ligated and the peritoneum intra-folded by a running continuous buried tendon suture which left no abraded peritoneum other than the portion already described. It was deemed unwise to drain the depressed portion through the vaginal canal and for better protection it was covered freely with sterilized aristol. There was considerable shock following the operation, but the patient rallied well and for forty-eight hours gave every promise of easy recovery. Nausea and vomiting then ensued with elevation of temperature and abdominal distension. Intestinal obstruction was recognized, but the danger was not thought sufficiently imminent to warrant surgical interference, until suddenly the condition became too grave to render the procedure, even as a folorn hope, advisable. Death occurred about seventy-five hours after the operation. Nausea and vomiting persisted to the end. Six hours before death the temperature began to rise from about 101 degrees until at death it had reached 107 degrees. Autopsy showed adhesion of the lower part of the small intestine to the punctated portion of the peritoneum. It was readily separated. The intestine about the point of adhesion was greatly distended by a large quantity of dark-colored fluid, evidently having undergone decomposition prior to death. The line of union of the intra-folded peritoneum was perfect. There had been no pelvic serous exudation and no septic infection.

Case 5.—Miss S., aged 44. Operation performed Nov. 30, 1895, for removal of a large adherent uterine myoma, assisted by Dr. Nelson of Chicago, Dr. Cilley of Boston, and Dr. Berrymore of St. Johns, N. B. The operation was long and tedious, followed by pronounced shock. Rallied well and on the second day the conditions seemed favorable for recovery. Nausea and vomiting commenced about thirty-six hours after the operation. Not very pronounced until twelve hours later, when it was evident that intestinal obstruction had supervened. I reopened the abdomen and found a loop of the lower part of the small intestine involved in adhesion of the omentum, situated in the right iliac region. The small intestines were greatly distended by gas and fluid, and were manipulated with some difficulty. At the time of the operation temperature was 101; immediately following the operation there was a large fluid dejection. Within an hour it was noted that she was in profound shock, from which she never rallied, death occurring some hours later. The most noteworthy feature was the elevation of temperature, which rose steadily about a degree an hour, reaching 107 degrees before death. I twice used an intravenous injection of saline solution, each time introducing nearly a pint. The flagging heart immediately responded, giving a comparatively slow, full, compressible pulse. The effect, however, soon subsided, notwithstanding the use of digitalis, strychnin and nitro-glycerin, used freely hypodermically.

Case 6.—Mrs. K., aged 34, never pregnant, married eight years, advanced cancer of the cervix from which she had suffered seevrely in her general health. Vaginal hysterectomy Dec. 7, 1895, assisted by Dr. C. E. Miles of Boston. Operation difficult, owing to a long narrow vagina and the extent of the disease. I sutured the broad ligaments and introduced gauze drainage. Convalescence seemed well established the tenth day, when symptoms of intestinal obstruction supervened. Upon opening the abdomen a loop of the lower portion of the small intestine was found incarcerated by an old band of adhesions which crossed the pelvis in the region of the right ovary. This was easily divided and the intestine freed. The abdominal wound was closed without drainage. Fecal evacuations soon followed with speedy relief. The shock following the operation was pronounced, but the convalescence was uneventful. The patient is well at the time of writing.

Case 7.—Mrs. D., aged 42. Very nervous organization, but in fair general vigor, although a severe sufferer for some years

from a retroverted, adherent, enlarged uterus, cystic ovaries and diseased tubes. The bowel had been freely evacuated, only fluid food in small quantities often repeated given for some days before the operation, with as large quantities of water as could be easily taken. Operation March 18, 1896. It was difficult, owing to the imbedding of the diseased adnexa in the pelvic cavity. After the removal of the diseased structures, the enlarged, retroverted uterus was brought forward and sutured upon each side to the abdominal wall. The pelvic peritoneum was reformed by lines of buried tendon sutures, leaving only a small portion of the fundus of the uterus uncovered, which was partially denuded of its peritoneum, owing to old adhesions. The small intestines were covered by the omentum with great care, the fundus of the uterus dusted with sterilized aristol and a vaginal drain of iodoform gauze carried through the posterior cul-de-sac into the vagina. Patient rallied well from ether. The night following the operation was comfortable. Nausea and vomiting ensued on the morning of the 19th, with a singular weakening of the heart's action, followed by rapid elevation of temperature, reaching before death 107 degrees. The skin was mottled with dusky patches some hours prior to death. These conditions were believed to be due to intestinal obstruction. The gauze drain was withdrawn and an effort made to examine the pelvis through the opening, but without avail. The general condition forbade reopening the abdomen. Regardless of every effort the patient died about forty hours after the operation. The autopsy showed a loop of the lower part of the small intestine attached to the fundus of the uterus, which was separated with the greatest ease. The intestine above was filled with several pints of a very fetid, dark-colored fluid believed to have undergone decomposition prior to death.

The cases reported were all operated on under the most favorable of hospital appointments and with the very best of attendant care.

I purpose to confine myself to the salient points offered in a review of the cases just reported.

Anatomic Relationship.—It will be noted that the portion of the intestine involved in the obstruction in each case was the lower part of the ileum, and that the obstruction was caused either by an adhesion of the intestine to an abraded peritoneal surface, or by a constriction.

Owing to the erroneous teaching of a leading English authority, it has been too generally accepted that, in the normal condition, the small intestines do not descend sufficiently to enter the pelvic basin. Since it was found that more commonly the portion of the intestines strangulated in inguinal hernia was a loop of the small intestine, this author ingeniously advanced the theory that the hernia itself was due to the elongation of the mesentery, causing the dislocation of the intestinal loops, rather than to a previous weakness of the abdominal wall. The measurements made by this distinguished anatomist seemed to show that the distance from the root of the mesentery to the intestinal loops was so short that only by dragging upon them could they be pulled down sufficiently to enter the pelvic basin. I do not doubt the correctness of his observations, but it must be remembered that the postmortem rigidity and fixation of the parts furnish conditions quite different from those found during life. My studies of hernia early led me to a consideration of this subject, and my observations, based upon the examinations made in about a thousand laparotomies furnish abundant proof that the small intestines, the ileum especially, in its normal range of motion includes a juxtaposition of the pelvic structures and organs.

Here the intestines are less protected by the omentum which intervenes between them and the abdominal wall, where the omentum is interposed, and it is a question by no means settled satisfactorily, if normally the omentum lies between the basic folds of the small intestine and the pelvic structures. It probably does not and so gives easy explanation why portions of abraded pelvic peritoneum are especially liable to offer points of attachments to the superincumbent intestinal folds.

A study of the large intestines shows ample reason why obstruction does not usually occur in this portion of the intestinal tract. That part within the pelvis, and which may be more or less involved by surgical manipulation, is within easy range of digital and instrumental examination, and the solution of any complications is easily determined. Ascending above the pelvis, the remaining portion of the large intestine, because of its position, construction and relationship, only very rarely can become involved in intestinal obstruction, and as a consequence may usually be excluded in the differential diagnosis.

The mooring of the cecum is generally sufficiently fixed to preserve its relationship unimpaired, but pathologic conditions arising from the appendix are much more common causes of intestinal obstruction than was earlier supposed. Adhesive bands frequently extend to the surrounding parts, which may become causes of intestinal obstruction by producing constriction of an incarcerated loop. In one instance of intestinal obstruction, I found an abnormally long appendix encircling the small intestine near its junction, and fixed by inflammatory adhesions. This had caused a slowly developing intestinal obstruction, which had been complete for some days ending in fecal vomiting before operation. Elsewhere the intestinal canal was normal.

In three of the cases here reported, two fatal, it will be observed that intestinal obstruction occurred from incarceration of the lower portion of the small intestine, caused by adhesive bands of old formation. In the two fatal cases a laparotomy had been performed some years previous and, although both were nonsuppurative cases, adhesions had formed, probably caused by undue pressure of opposing peritoneal surfaces, owing to pathologic conditions. When, as in these cases, the omentum becomes the offending structure, I know of no anatomic guides that will lead us to the part involved. Hence, the surgeon must examine carefully a wide area, without special direction except the guidance taught by the individual history.

Diagnosis.—The foregoing histories teach a wide difference in the severity of symptoms from that of intestinal obstruction as usually observed in volvulus, or strangulation resulting from hernia. Here, even in volvulus, in umbilical and femoral hernia, where the symptoms are the most acute, a considerable longer period ensues before the patient is *in extremis*. In the last case reported, death occurred before it seemed possible for a fatal issue to follow from an arrest of the intestinal fluids, where also the greatest care had been exercised in emptying the intestinal tract, and preventing fermentation by use of salol, etc.

In none of the fatal cases reported, was the integrity of the intestine endangered, and it is not to this we look for the cause of death, as has usually been considered the greater danger in cases of constriction of the bowel in hernia.

To what then are we to attribute the cause of death? May it not be, in the first instance, the operation which has so lowered the vital processes, which hold their sway over the living structures, as to admit changes to ensue which otherwise would not occur?

These vitiating processes are rapidly augmented by the fermentative changes which occur in the superincumbent intestinal contents. These fluids are not extraneous, that is to say, only in very small part consisting of the ingesta, but are made up largely of the albuminoid secretions, vitiated products of the glands, together with the fluids poured out by the obstructed blood circulation. The chemic products resulting from this decomposition are crystallin and in solution easily reënter the blood current, producing a septic infection of the most virulent character.

Changes in the hepatic structures occur early and the devitalization of the tissues, at first pronounced, go on *pari passu* in geometric ratio until the individual is destroyed by acute blood poisoning, rendered far more rapid from its initiation having commenced under such unfavorable circumstances. Peristalsis of the intestine lessens at an early period because of a reflex paralysis of the local inhibitory nerve centers and, as a consequence the opposing peritoneal surfaces remain more nearly at rest, and at the point of injury the effused lymph rapidly becomes organized. Nausea, vomiting, diminution and arrest of peristalsis, abdominal distention, accompanied by general constitutional depression, with increasing thirst dependent upon lack of absorption are among the earlier symptoms. Possibly local pain, which however, in my cases has been absent, may point to the site of adhesion. A marked elevation of temperature is relatively not an early symptom. The nervous centers are disturbed by an indefinite anxious foreboding, the pulse becomes accelerated, respiration often shallow and rapid. The latter is probably due to an interference with the action of the diaphragm. These symptoms may be complicated by a general peritonitis, and have without doubt often been mistaken for it. However, a careful analysis of symptoms will generally enable the observer to make an accurate, differential diagnosis.

Prevention.—Although in not more than one per cent. of laparotomies, does intestinal obstruction occur, and in my own experience the percentage is about one-half less than this, when it does take place the complication is so severe, and the fatality so great that the fear of intestinal obstruction may well be considered the nightmare of the abdominal surgeon. Therefore it is of the utmost importance that every precaution possible should be taken to prevent its occurrence. Believing that its causation depends in a large degree on the abrasion of the peritoneal surfaces about the site of the operative field, one of the first queries that arise is, how may this be lessened or avoided? It was for this very purpose, that years ago I introduced to the profession various methods of plastic surgery of the intra-abdominal and pelvic structures. These I constantly practice and enthusiastically advocate in order to restore all injuries of the peritoneum.

In the removal of tumors I cover with the greatest care, the healthy peritoneum over their pedunculated attachments. Where, for any reason, it is necessary to remove the uterus, for a long period I have divided the tissues in such a way that the cervical stump can be carefully closed over by the double intra-folding of its peritoneal investment. This I do by the use of the parallel running suture, the stitches taken in such a way that when drawn upon, the suture itself is completely buried, and the peritoneum lies in easy, accurate approximation without tension. If a ureter is laid bare, the peritoneum is covered over in the same manner.

In the removal of the appendix, the stump is always covered and peritoneal abrasions are intra-folded where the integrity of the same has seemed doubtful. In some instances I have even closed the entire peritoneum across the brim of the pelvis, at its basic attachment, to the floor of the bladder, thus completely obliterating it. By these measures, in this class of difficult cases I have found it possible to attain another very desirable end, that of closing the abdominal wound without drainage.

Here also, for many years, I have taken the precaution to approximate the abdominal peritoneum with the same care, in order to prevent adhesions of the omentum to the line of the wound, and with most excellent results. Since 1892 there has occurred in my experience the three cases above reported where death has taken place from peritoneal adhesions. In the first, a case of vaginal hysterectomy, it was thought wise to use clamps which left uncovered the divided peritoneum of the broad ligament. However, in a majority of vaginal hysterectomies by careful manipulation it is possible to suture across the everted peritoneum. When this can not be effected, the raw surfaces can usually be protected by gauze. It may however, happen as in Case 5, that pathologic changes have ensued at some previous period, leaving resulting inflammatory bands. I know of no way to provide against such complications, unless it may be in doubtful cases to open the abdomen from above also, in order to deal intelligently with existing conditions.

In Cases 4 and 7, at the time of operation, doubts were entertained as to the method to be selected. In Case 4, where the pelvic peritoneum seemed scarcely abraded, the results show that it would have been wiser to have adopted one of two alternatives. A vaginal opening might have been made and the parts protected by iodoform gauze, or the depressed portion of the peritoneum have been sutured across at its upper part. It is probable this would have been the better of the measures to have adopted, since it would have added very little to the traumatism and taken less time than the opening of the vagina and the introduction of the vaginal drain. It was, however, covered with a thick layer of aristol, which I can not doubt would prove ample protection in the majority of instances.

In Case 7, the uterus should have been removed. The organ had long been bound down by adhesions which were separated with difficulty. The protection, however, seemed ample, by the free introduction of iodoform gauze which was so packed about as to cover the denuded peritoneum. The point of adhesion was very near the fundus of the uterus where the gauze had become displaced. I can not question the wisdom of removing the uterus in many cases where, until a very recent period, such a procedure would have been considered unsurgical. It adds comparatively little to the difficulties or severity of the operation and permits the covering in of the pelvic peritoneum in an even fold, from side to side, entirely across the pelvis.

The omentum.—Where for any reason the omentum has been involved in the pathologic changes, it becomes very important to examine it carefully, and if rents have occurred to close them. This is best effected with a continuous tendon suture. It should then be replaced with the greatest care, and if any

points of abrasion appear they should be well dusted with aristol.

Cases 3 and 6 are instructive; Case 3 where it seems very probable that a more careful observation should have been made and the attachment of the omentum to the anterior abdominal wall, resulting from a former operation, should have been separated. In Case 6, it seems as if every precaution had been taken to prevent such an occurrence. The omentum which had been carried up to the region of the liver by the large myoma was somewhat changed in its structure. The parietal peritoneum had long remained in direct contact with the myoma and by friction was also changed in structure. The omentum was spread out evenly over the intestines and brought well down to the brim of the pelvis. There was no bleeding from the separated points of attachment, and the pelvic organs were carefully cared for by the plastic repair of the peritoneum. This had been lacerated in various directions, and the left ureter was exposed for several inches. No points of attachment to the pelvis were found, the effused lymph leaving them smooth and unadherent. The abdominal peritoneum was also intact. The constriction was well down on the right side at the brim of the pelvis and was easily freed.

It is not supposed that any better measures for the prevention of intestinal obstruction could have been instituted and the resulting adhesion of the omentum to the side forming the band was probably the more easily induced, owing to the changed conditions resulting from the long pressure of the tumor.

Treatment.—The object of this paper and the analysis of this series of cases is a practical deduction as to what may be done when this most grave of all complications in abdominal surgery occurs. This is the more important, since authors are singularly at variance and apparently without definite reasons as to the selection of the means to be employed. Unfortunately, medicines, in the hands of all, fail to be of much value, except so far as hypodermic medication may control pain and perhaps materially aid the great motor nerve system.

It is evident that the entire alimentary tract above the point of constriction becomes early paralyzed and incapacitated to do more than permit the absorption of crystallin substances in solution.

It may be doubtful if our efforts to stimulate peristalsis, even if successful, do not hasten the fatal issue, unless they are equal to the forcible separation of the intestine at its point of occlusion. If this supervene a happy issue will be attained and prompt relief afforded. This is often seen in the unfolding of a displaced intestine with the disappearance of all untoward symptoms.

One of the most extraordinary of the conditions which supervene in intestinal obstruction is the rapid accumulation of fluid above the occluded part, and, although the thirst is usually excessive, the absorption even of water from the stomach does not take place, and it is probably a positive detriment to add to the rapidly accumulating fluid by even the administration of water. Vomiting certainly does harm unless by the forcible strain the adherent parts may be separated. This rarely happens, and in case a loop of intestine is incarcerated must add to the mechanical impedimenta.

If then we are deprived of the administration of medicines by the stomach, and if thus given, they are to the detriment of the patient, what remains at our command as a means of relief? Since fecal evacuation is the desired end to be accomplished, experience in other conditions would teach that injections and medicamenta, applied to the lower bowel, might be of service. The foregoing discussion of the anatomic construction of the large bowel teaches us why we would not expect the constriction to occur in this part of the alimentary canal, unless, indeed, in rare instances the pelvic portion of the canal is involved as the result of our surgical interference. If this has happened, rectal examination will determine the fact and probably enable us to deal easily with the occlusion. Other than this, the benefit to be derived from large injections, even if they penetrated to the transverse colon, is exceedingly doubtful. The still further distension of the abdominal cavity is certainly to be deprecated, the pain and discomfort of the patient tend to weakness, and the reflexive stimulation of the peristalsis of the small intestine thus aroused induces nausea and vomiting, which is an injury unless it may, in itself, be sufficient to free the obstruction.

If, as happens in a majority of cases, the portion of the alimentary tract involved is the lower part of the small intestine, then we may determine why our efforts, applied to the large intestine are so utterly futile and the result only a loss of time and exhaustion of the patient.

It is the more important to consider these probabilities, since one of the primary rules laid down for the treatment of intestinal obstruction is the use of large enemata, variously medicated. That sufficiently careful consideration has not been given to this phase of the subject, that the obstruction does not lie in the large intestine except by the rarest of accidents, I cite the recent experience of a prominent English authority who, after using enemata freely without relief, made an artificial anus above the sigmoid flexure only to permit an easy escape of the injected fluid. It is needless to remark the patient died unrelieved of the obstruction.

If summoned to the relief of the sufferer in such desperate cases, what shall be advised? Certainly not to do harm if we can do no good. Assuming that, prior to the operation, we know that the alimentary canal had been properly emptied so that, at the time of operation, the bowel was in the best possible condition to bear its necessary manipulation, then it is clearly our duty to keep the stomach empty. It seems to be equally important to desist from the common practice of fretting and exhausting the patient by large, repeated rectal enemata. It is true that a certain amount of water may be absorbed which the system very much needs, but that can be accomplished by much less violent measures. Hypodermic medication of morphia is of value, but this is better given in small doses, often repeated. More recently this valuable remedy has been decried under the belief that it caused an interference of peristalsis, even to the producing of intestinal paralysis. It is indeed strange if opium which has been relied upon for generations as the remedy of greatest value in nearly all the intestinal diseases can now be considered by any as the cause of obstruction and its administration criminal. Its use should be minimized to the moderate relief of pain.

Strychnia, digitalis, nitroglycerin are remedies, to be used hypodermically, of much value in holding in conservation the rapidly ebbing vital force. Nature's own powers are not to be held in too light esteem,

since in the most desperate of conditions she triumphs occasionally. Of this we were never so fully aware as at the present, since the laparotomist is often called upon to examine the battle ground of previous victories, as he studies the results, where intestines have been banded to each other and the neighboring parts, and yet, within limitations, able to perform their functions for an indefinite period.

Although, as in the operation for appendicitis, it may be in the minority of cases that the aid of the surgeon is justly called to attempt to restore the damages incident upon his previous work, a considerable class of these cases doubtless exist, and when to reoperate is a question that may never be settled. When the weight of evidence points clearly not alone to obstruction as the impending danger, but that nature is powerless to remedy it, there can be but one rule, as in strangulated hernia, operate at the earliest possible moment for the relief of the incarcerated organ. A reopening of the abdomen within two or three days after the primal operation must ever be considered a formidable surgical measure, not alone in that the patient is necessarily in a serious condition from the previous operation, but that these conditions have become greatly intensified owing to the constriction in the alimentary canal. It is important to first wash out the stomach by means of the stomach tube. Often a large quantity of fluid will pour out with much advantage in the subsequent result. This I have done at times for years. Our previous knowledge of the intra-abdominal conditions is of the greatest value. We must keep in mind the portion of the intestine probably involved, and the location where we are likely to find it. This usually is the small intestine, generally the ileum, and the location the site of the surgical operation. Since this is more commonly the pelvic basin it is the first location to be explored. The second is in the neighborhood of the appendix. These having failed to furnish results, we are to examine carefully the omentum and its relation to the small intestine. A careful observation of these factors in the order proposed is of the utmost value. Nothing is more to be deprecated than the aimless searching in the abdominal cavity, and the evisceration of the patient by the rolling out of the distended intestine, as is often practiced in the blind search for the constriction.

The inflated intestines are ever protruding, but as far as possible are to be avoided, since the inflation itself teaches that this can not be the part involved. On the contrary, a portion of the intestine that is empty and flat is likely to lead almost at once to the constricted part. Here as elsewhere intimate anatomic knowledge of the abdominal cavity and its contents is of the utmost practical importance.

Etherization should be minimized. My experience with oxygen gas leads me to think favorably of it as an adjunct to chloroform. The operation should be undertaken under as favorable circumstances as possible, conducted with coolness, deliberation and dispatch, since the resources of the surgeon are rarely more severely taxed than in this dilemma.

Owing to the severe shock incident to an operation as above described, it has been recommended and practiced to make a small opening in the abdomen and through this withdraw the first inflated fold of small intestine that presents, suture it to the peritoneum and open. This gives temporary relief, permitting the escape of the pent-up toxic elements and affords time for the patient to rally from the extreme depression incident to the obstruction. As soon after as the general condition will permit, a third operation is undertaken for the relief of the constriction, at which time operative measures for the cure of the artificial anus are also instituted. In a dilemma of severe complications there may be conditions that would cause such a temporary operation to be favorably considered, and it is well for the surgeon to keep in mind the possibility of its advantage.

In review, I am constrained to add emphasis to the practical importance of the preparation of all patients for laparotomy. The condition of the nervous system is important. The lowering of the nervous tension is a very great gain. The substitution of hope for fear, and confidence in the outcome is of much more value than I earlier believed; and why should not this be true, since the best definition of life itself is the equilibrium of the vital processes in their sway over the organic matter which they hold in control?

The intestinal canal should be carefully emptied and peristalsis kept active at the time of operation. It is better to employ only fluid food for some days prior, and antiseptics, such as small doses of calomel and salol, I believe to be of value. Time is an important factor in the operation, but this is no excuse for undue haste or inaccuracy of work.

Intraperitoneal surgery must ever be of the highest order, and accuracy and completeness of detail must go hand in hand in every process to prevent infection. When these great surgical laws have been complied with recovery is in direct ratio with the minimizing of the devitalization of the patient. These are the almost ideal results which modern surgery has attained and upon their practical application depends the marvelous success of the surgeon of to-day.

DISCUSSION.

Dr. A. H. Cordier, Kansas City, Mo.—In the majority of instances we will find the obstruction near the junction of the small with the large bowel. It is impossible to locate this dangerous condition when we are operating through the vagina. The argument which Dr. Marcy has presented is in favor of doing these operations through the abdominal wall. The work then is complete. It is not the specimen alone for which the surgeon should seek in doing abdominal operation. He should seek to liberate adhesion and relieve the patient of all likelihood of intestinal obstruction following the work. At the time of operation we will find the bowel flaccid—comparatively speaking, empty, with adhesions. These adhesions may not have given trouble prior to operation, but with the amount of handling which of necessity must be done in operating, either through the vagina or abdomen, if the adhesions are not separated, we have following the operation great distension of the intestines, and following that a semi-paresis. We have the difficulty of a paralyzed bowel to contend with and inability to force the contents of the bowel beyond the seat of obstruction. We must separate the adhesions and liberate the bowel. I am satisfied that many cases, reported as dying from some form of sepsis or peritonitis, would, if a careful postmortem was made, be found to have died from intestinal obstruction, the sepsis and peritonitis being secondary, because the gaseous distension can not relieve itself.

Dr. E. E. Montgomery, Philadelphia—Too much stress can not be placed upon the early treatment of cases of intestinal obstruction. The distension which takes place in the upper part of the stomach may be relieved temporarily by introducing a stomach tube, washing out the stomach, allowing a large quantity of gas to escape, removing the contents of the stom-

ach. This takes away the pressure against the diaphragm, relieves respiration and facilitates the heart's action. This should be tried once or twice, and if the patient continues to suffer from intestinal obstruction the proper plan would be to reopen the abdomen. I must take exception to the remarks of the last speaker, that in these cases it indicates the necessity of opening through the abdomen in cases of pelvic disease. Cases operated upon through the vagina are not more subject to intestinal obstruction than are those operated through the abdomen. I have not seen a single case of removal of the uterus through the vagina for inflammatory conditions in which the subsequent convalescence of the patient was disturbed by symptoms of obstruction.

DR. RUFUS B. HALL, Cincinnati—It is a difficult matter in any given case of intestinal obstruction to make a positive diagnosis until the patient is practically dead, and that is why a reopening of the abdomen in such cases gives such a high mortality. The differentiation of intestinal obstruction is difficult. Many times I have been on the point of giving the patient an anesthetic to reopen the abdomen, and in half an hour afterward my patient was convalescing and recovered without trouble. If we only knew that the patient had obstruction we could probably save them all.

DR. HENRY P. NEWMAN, Chicago—The fact that we have these cases of intestinal obstruction following laparotomy should stimulate us to better, more thorough and complete work. True, the obstruction usually occurs in desperate cases, but if the patients are handled with care and with the utmost thoroughness, they will frequently escape this accident, particularly if we exercise caution in covering abraded surfaces with pertioneum and the vaginal tract with omentum. As to the protection of abraded surfaces after laparotomy that can not be covered with peritoneum, they may be kept apart by the proper application of gauze or wicking.

It was my misfortune to lose a case of vaginal hysterectomy recently from intestinal obstruction, which probably could have been avoided if someone had been at hand to watch the case. Unfortunately, I was called out of the city at the time. Presumably a portion of the intestine had become adherent and was drawn into the fold of the vagina, causing obstruction and death.

In regard to the proper application of gauze after vaginal hysterectemy, the gauze should not penetrate the abdominal cavity. It should be applied in a manner to guard against hernia and a means of drainage, but should not come in contact with the intestine. Furthermore, it is important to begin the use of mild catharsis to stimulate peristalsis early, and here let me enter a protest against the use of opiates. Morphin is sparingly used at the present time in laparotomies, and I think it ought to be. On the other hand, use laxatives early, beginning twenty-four hours after your operation, particularly where there is an accumulation of gas and perhaps great distress.

DR. J. W. BOVEE, Washington, D. C.—I had the misfortune to lose a case from intestinal obstruction following abdominal section, the woman dying on the fifteenth day after operation. She progressed nicely for five days, and then the bowels did not move for one or two days. They moved again on the seventh day. On the ninth day she was taken with considerable pain in the region of the cecum. I commenced with catharsis, but could not move the bowels, although I used enemata and also croton oil. On the fifteenth day I opened the abdomen and found two or three coils of the small intestine down in the right side of the pelvis attached to the posterior surface of the broad ligament from which I had removed a tubo-ovarian abscess. I separated the adhesion with scissors, closed the abdomen as quickly as possible, and did it with scarcely any anesthesia, realizing that it was a desperate case. I make it a point now to close raw sufaces in the abdomen if the condition of the patient permits and move the bowels as soon as possible. Within twenty-four hours after the operation I commence salines.

DR. GEORGE WM. REYNOLDS, Chicago—One of the fruitful causes of intestinal obstruction is the manner in which the abdominal incision is closed. It is my practice not to include the parietal peritoneum in the deep sutures. Frequently, in tying them, where we penetrate the peritoneum, loops of intestine are caught and obstruction follows. My practice has been to sew the parietal peritoneum separately, including in my deep sutures the muscles, the fascia and the external skin.

DR. JOSEPH TABER JOHNSON, Washington, D. C.—It is altogether possible that by passing the same suture down through both sides of the abdominal incision and up through the other side by the time the operator is ready to close the abdominal wound, tying off one suture after another, a knuckle of intestine or piece of omentum may get in between the stitches and produce adhesions which result in intestinal obstruction. I have known one or two cases due to this cause. There is no doubt but that a great many cases can be prevented by perfect operating, leaving as few raw surfaces as possible, taking great care in separating adhesions that exist about the tumor itself, and by the covering of all raw surfaces in the manner suggested by the paper. The diet question after operation is one of importance. I had the misfortune to lose a patient some time ago when a difficult hysterectomy had been performed. The patient was about ready to go home. She was exceedingly anxious that evening to have some veal cutlets. She partook of them and had an attack of indigestion shortly after which brought on vomiting. She vomited until she died. A postmortem was made and a twist of the small intestine was found. The intestine below the twist not larger than a pencil, while above it was as large as my wrist. If we had been able to diagnose the case when the first symptoms of intestinal obstruction came on, we doubtless could have separated the adhesions caused by the intestinal obstruction and saved our patient.

DR. MARCY—Had I written upon this subject a year ago I probably should have taken a different view of it, but during the last year the cases which I have reported occurred. If you will look carefully over reports of cases you will find that intestinal obstruction following laparotomy is more frequent than we formerly supposed. These cases point out the necessity for more careful, thorough work in order to avoid this accident. It is a question in my mind whether the pelvic structures are protected by the omentum, and that is the reason we are so likely to have intestinal adhesions occur in the pelvic region. The normal range of motion of the small intestine, including the pelvic basin, gives emphasis to that remark.

In reference to the vaginal route, I do not exactly agree with Dr. Montgomery. Blind surgery may be stigmatized as bad surgery. Vaginal surgery is necessarily in large measure blind surgery, in that the eye does not direct the hand. In one case that I lately saved there was an old band of adhesion which had nothing whatever to do with the carcinomatous uterus which I had previously removed. Under this old adhesion was a loop of intestine which had become incarcerated. It was freed and the patient recovered.

In another case, twenty-two days after operation a double loop of the small intestine was found united to the stump from which I had removed an ovarian cystoma. In this case we reopened the abdomen and saved the life of the patient.

HYSTERECTOMY AS AN ACCOMPANIMENT TO BILATERAL REMOVAL OF THE APPENDAGES.

Read in the Section on Obstetrics and Diseases of Women, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5–8, 1896.

BY REUBEN PETERSON, M.D.

GRAND RAPIDS, MICH.

During the past five years decided changes have taken place in the methods of dealing with pelvic inflammatory diseases. Prior to 1890, it was the established custom in America to deal with irreparably diseased appendages by removal solely through an abdominal incision. Deliberate hysterectomy as

an adjunct to ablation of the tubes and ovaries was not practiced. Péan in 1886 removed by the vagina the diseased uterus of a patient whom he had failed to cure by a previous removal of the appendages. From this and similar cases he sought to establish the principle that for certain forms of pelvic inflammatory disease hysterectomy as well as removal of the appendages should be performed. His work along these lines, which was reported before the Paris Academy of Medicine in 1890, seems to have attracted but little attention in this country. Operators of large experience who had carefully followed up the history of these cases, subsequent to the operation of bilateral ablation of the adnexa, were forced to admit that many of their patients were not restored to health. Many still suffered from hemorrhagic and purulent uterine discharges and the reflex symptoms, which had prominently figured among the indications for the operation, persisted to a greater or less degree. In order to do away with these unfavorable sequelæ, portions of the uterus were surgically treated. It was urged that in every case where the appendages were to be removed for chronic inflammatory disease, the uterus first should be thoroughly curetted and drained. Also that the tubes should be dissected out of the uterine cornua in order that no diseased tissue be left behind. Although these procedures were carefully carried out there still remained cases which presented the old train of symptoms. Hence when Polk's paper[1] on "Hysterectomy (supra pubic) for Salpingitis and Ovaritis" appeared in the latter part of 1893 in which hysterectomy was advocaed for every case where both appendages had been removed for serious disease, the idea, coinciding as it did with the clinical observations of many operators,[2] was eagerly seized upon by prominent gynecologists throughout the country and immediately put into practice. Since that time hysterectomies have been done by the score in this class of cases. Is it not well to pause after three years' work in this line and ask ourselves *not* how many uteri have been removed during this period, but how much has been learned from careful microscopic and bacteriologic examinations of these removed organs? In other words, do the pathologic lesions found in the ablated uteri confirm the correctness of the reasoning of those who, mainly upon clinical grounds, advocate hysterectomy in certain inflammatory pelvic diseases. Henrotin[3] at the last meeting of the American Gynecological Society states that "the position of advanced, observant gynecologists who are not hampered by tradition or custom or afraid of their own stubborn dogmatic expressions in the past can be stated as follows: 'In every operation for septic diseases of the female generative organs which demands the removal of the tubes and ovaries, hysterectomy should also be performed unless there are contraindications forbidding it.'" I consider this a fair statement of the present position of surgery upon the subject. The whole question will turn upon the interpretation placed upon the phrase "contraindications forbidding it." The more carefully the removed uteri are studied in connection with the history of the case and the condition of the pelvis found at the time of the operation, the nearer we will be to determining what will constitute a contraindication. If it can be shown that certain pathologic uterine lesions either of the mucosa or of the deeper structures are susceptible of cure without removal of the organ, then considerable advance has been made toward establishing another contraindication. On the other hand microscopic examination of the removed organ may show such decided morbid changes in its structure as to render any curative treatment short of ablation ineffectual. This line of research may not be the easiest or most enticing. One would far rather have a universal rule for guidance, such as is laid down above, but conservative surgery does not advance along these lines. For example, it is much easier to adopt a universal rule to operate for appendicitis in every case as soon as the diagnosis is made. Yet those who advocate and observe this rule are in the vast minority and ever will be, so long as it can be proven that a certain percentage of cases recover by adhering to other modes of procedure. The technique of hysterectomy has been so perfected that in the hands of the skilled operator the mortality is increased but little over that resulting from removal of the tubes and ovaries alone. This fact, however, does not justify one in removing the uterus in every case. While clinical experience has shown me that a certain percentage of my cases were not cured after their pus tubes were removed, on the other hand it has demonstrated that certain cases recovered after this treatment. It seems to me it is plainly the surgeon's duty under these circumstances to endeavor to solve the problem why one set of cases recovered and the other did not. The reason must lie, other things being equal, in the condition of the uterus at the time of the operation. How can these different conditions be studied and definite rules of procedure be established except it be upon both pathologic and clinical grounds. Yet a perusal of the literature emanating from our gynecologists upon hysterectomy for inflammatory affections will show that their conclusions have been arrived at mainly from a clinical consideration of the subject, That this is a dangerous mode of studying any surgical question and one liable to lead to grave errors is demonstrated by the abuse of ovariotomy when it was performed for symptoms and not for demonstrable pathologic lesions. I fail to see the line of reasoning adopted by Polk. He, the advocate, par excellence, of conservative surgery, who would leave in an ovary or part of one with everything else removed, advocates the removal of the uterus in every case of bilateral ablation of the appendages because *some* cases fail of cure without this additional procedure. What right has he or anyone to justify his position by claiming that the "emasculated uterus" is a useless organ and hence should be sacrificed? It should be sacrificed if it is so diseased that no known procedure can effect its cure and that should be the only justifiable ground for its removal. One who claims so much for thorough dilatation and curettage of the uterus, in the way of depletion and drainage, should surely obtain better results than are shown by his advocacy of the proposition to perform hysterectomy in each of these cases.

I am making a plea against the adoption of any universal rule in regard to these cases as if it were finally settled. I claim that the surgeon has no right to remove the uterus after removal of the appendages unless he is convinced that the organ is diseased beyond the hope of cure by less radical methods. Krug[4] in the discussion of Polk's paper, said he had "never found a healthy uterus when there had been such inflammatory disease in the tubes and ovaries as would warrant bilateral salpingo-oöphorectomy." It

is not a question of the uterus always being diseased in these cases. As most inflammatory disease of the adnexa arises from some form of intrauterine affection, it would be remarkable if the uteri were perfectly healthy. The question is how much are they diseased and how can this disease be cured? I would not underrate the work of those who were the first to advocate hysterectomy for inflammatory disease. I consider it a great step in advance and for certain conditions it is the only procedure which should be adopted. But I believe that the prediction of Baldy made two years ago in a paper[5] on this subject, that uteri would be removed which might safely be left, has proven true to a far greater extent than one could have predicted. Even if the uterus be a functionless organ after bilateral salpingo-oöphorectomy, I do not think the most radical operator would urge its removal for this cause alone, if he could determine in which cases it could "safely" be left within.

The investigations of Wertheim[6] have thrown considerable light upon gonorrhea of the uterus. They would tend to show that the deeper uterine structures are affected to a greater degree than was formerly supposed. There is in many cases infiltration of the muscle with hyperplasia of the vessel walls. That the gonococci can penetrate into the muscularis is considered highly probable by Wertheim though he has never bacteriologically demonstrated their existence.[7] That a metritis with sensitiveness and general enlargement occurs in gonorrheal disease of the uterus is a well known clinic fact, but that it is due to the gonococcus has never been proven because the muscular tissues being an unfavorable soil for the germs they either perish or pass on through the uterine wall to the peritoneum. Madlener[8] asserts that he actually demonstrated the gonococci in the muscular tissue in one case where the uterus was removed seven weeks after confinement.

Gonorrheal disease of the uterine deeper structures offers then an explanation of the unsatisfactory results obtained by treatment through the curette and drainage. Removal of the endometrium leaves the deeper structures still diseased and in a short time the old symptoms will again appear. For this reason Werth[9] claims inasmuch as it is impossible clinically to distinguish these forms of endometritis where the deeper tissue is involved, that a thorough cauterization after curettage should always be made. He recommends liquor ferri and shows that after its use a regeneration of the epithelium is delayed.

The conclusions were arrived at from a careful microscopic examination of uteri removed after curettage performed some days previously, and are therefore more valuable than mere theoretic conjectures in the matter. In another article[10] he shows that the endometrium is never entirely removed, patches untouched by the curette remaining. The cornua were most likely to be spared.

Just what percentage of cases of inflammatory disease of the adnexa are due to gonorrhea it is hard to say. Probably 25 per cent. would be a conservative estimate. It is generally conceded that Noeggerath's[11] picture of latent gonorrhea and its frequency was exaggerated. Yet no one can question the important role played by the gonococcus in the production of pyosalpinx. Apparently gonorrhea of the uterus is especially difficult of cure, and this should have weight in deciding whether hysterectomy should follow removal of pus tubes.

Schauta[12] takes a very decided stand in this matter. From the results of his observations he finds that only 59 per cent. of cures result when both appendages are moved and only 23 per cent. where one side is removed. When this lesion is due to gonorrhea, he, like Tait, claims that when one side is removed the other should be also together with the uterus. This recommendation is not based, it seems to me, upon sound scientific principles and is not advocated by the majority of gynecologists. If this dictum be followed then we practically concede that we are powerless in the presence of gonorrheal disease to effect a cure short of hysterectomy. While the investigations referred to have shown us why frequent failures result from our efforts to cure gonorrhea of the uterus, still, I do not believe that every case of gonorrheal endometritis is incurable. A certain proportion of the 25 per cent. will no doubt fall under this category and in time we shall be in a position to recognize these cases and act accordingly. Much will depend upon the wishes of the patient in cases where one side is unaffected[13]. She may demand the most radical operation if there exists a possibility of the other side becoming affected. On the contrary she may be desirous of bearing children and be willing to risk the possibility of a secondary operation from the failure of intrauterine treatment. Schauta makes every effort to establish the diagnosis of gonorrhea prior to operation and during the progress of the latter has the contents of the pyosalpinx examined for the gonococci. If gonorrhea is found to exist both adnexa and uterus are removed on the ground that the gonococci work irreparable change in the uterus while the inflammation of the appendages due to streptococcus and staphylococcus infection is usually one sided, the uterine lesion heals and consequently the uterus can safely be left. As more than 50 per cent. of the cases of inflammatory disease of the adnexa are believed to arise from infection after abortions or the puerperal state, it will readily be seen that if Schauta's claims be true there are many cases where the uterine lesions will either be cured or amenable to treatment after the removal of the adnexa.

More such investigations should be made and by the collections of bacteriologic and clinical data, rules can be formulated which will be of universal value to the surgeon in deciding what should be done in a given case. Whatever may be said to the contrary, hysterectomy is a much more radical procedure than bilateral removal of the adnexa and should never be performed except when demanded for the cure of the patient.

Some advocate hysterectomy on the ground that 12 per cent. of chronically diseased adnexa requiring removal are found to be tubercular upon microscopic examination and that the uterus may be also affected.[14] This position is strengthened by the observation of Cullen,[15] who thinks tubercular disease of the uterus is usually secondary to that in the tubes. But tubercular uterine disease is usually demonstrable by the examination of scrapings and hence it is possible to have a fairly clear idea of the condition of the uterus prior to the operation. Where the uterus is found to be tubercular it should always be removed, because of the difficulty of curing it by intrauterine treatment. Where the microscopic appearances of the adnexa show tubercular deposits, it would seem advisable to remove the uterus because of the serious nature of

the disease, the possibility of the uterus being affected and the difficulty of curing tubercular uterine disease by the curette. If the microscope shows tubercular disease in the appendages unsuspected before, the uterus can be removed by a secondary operation.

At the last meeting of this ASSOCIATION a former chairman of this section, Dr. Eastman, remarked in speaking of hysterectomy for fibroids, that he was not sure of what the after-effects of complete removal of the uterus would prove to be, that he found vaginal prolapse, cystocele and rectocele following some cases, and that he would be obliged to suspend judgment until he had operated on more cases by this method. This was said by a man who has probably performed as many if not more complete hysterectomies than any operator in the country. It would seem that the lesson to be learned from the remarks of such a man, was to be cautious in urging that the uterus be removed. It is generally conceded that when we are obliged to remove an organ, it is a practical acknowledgment of defeat. Starting from this defeat however our efforts involving removal may end in victory as regards the health of the individual.

We must continually keep before our minds the two great classes of cases calling for bilateral removal of the adnexa, and it is only necessary to recall our past cases to find examples of each.

The first is where there is advanced disease, usually chronic, involving both adnexa. The tubes and ovaries, whether filled with or free from pus, are bound down in the posterior cul-de-sac and to the omentum and bowels by dense adhesions. Much labor must be expended in enucleating these masses and much injury may be done the uterus in separating it from the pus sacs. Repeated infections with resulting metritis and endometritis have also greatly impaired its integrity. Here the indications are clearly for removal of uterus. Its peritoneal covering may be so injured that, if left, it will be firmly bound down by dense post-operative adhesions and give rise to great suffering. These are the cases where hysterectomy will give brilliant results as compared with the older methods. But these are not the usual but the severe cases and fortunately the exceptions.

The second class is the one we are considering in this paper. Here the recurrent attacks of pelvic peritonitis have been fewer, hence the adhesions less. The tubes and ovaries may be the seat of purulent collections, or their contents may have become changed to a cheesy material with thickening of the walls. The fimbriated extremities of the tubes are closed and no conservative operative procedure can be entertained. The uterus is enlarged but fairly movable. The masses on either side having been removed without much difficulty, the operator is confronted with the question of whether hysterectomy shall follow. His decision will depend largely upon the condition of the uterus and the possibility of its being cured by treatment directed to its interior, aided by the atrophy resulting from the removal of the appendages. Careful, recorded observations, both pathologic and clinic, will result in rules which will guide the surgeon in his choice of procedure.

602 Pythian Temple.

REFERENCES.

[1] Polk: Hysterectomy for Salpingitis and Ovaritis. New York Journal Gyn. and Obs., Vol. 3, 1893, p. 1053.

[2] New York Journal Gyn. and Obs., Vol. 3, 1893, p. 1088; Vol. 4, 1894, p. 61.

[3] Henrotin: Conservative Surgical Treatment of Para- and Peri-Uterine Septic Diseases. Am. Gyn. and Obs. Jour., Vol. 6, 1895, p. 709.

[4] New York Journal Gyn. and Obs., Vol. 4, Jan., 1894, p. 72.

[5] Baldy: Extirpation of the Uterus in Disease of the Adnexa Transactions American Gynecological Society, 1894.

[6] Wertheim: Centralbl. f. Gyn., 1895, No. 26.

[7] Wertheim: Deutsch. Med. Woch., No. 27, July 4, 1895.

[8] Madlener: Centralbl. f. Gyn., Dec. 14, 1895.

[9] Werth: Archiv f. Gyn., Band 49, Heft 2.

[10] Werth: Centralbl. f. Gyn., 1895, No. 7.

[11] Noeggerath: Transactions American Gynecological Society, 1876.

[12] Schauta: Centralbl. f. Gyn., 1895, No. 29.

[13] Noble: Certain Aspects of Gonorrhea in Women. Transactions American Gynecological Society, Vol. 17, 1892.

[14] Williams: Johns Hopkins Hospital Reports, 1892, Vol. 3.

[15] Cullen: Johns Hopkins Hospital Reports, Vol. 4, Nos. 7-8.

DISCUSSION.

DR. JOSEPH EASTMAN, Indianapolis—I am intensely pleased with Dr. Peterson's paper. The gentlemen who run to extremes, who ride hobbies to the extent that some of those engaged in this work have done, have been severely reprimanded by the President of the AMERICAN MEDICAL ASSOCIATION, as well as the incoming President, during this meeting, and it is encouraging indeed to see a young man come in here and present such a conservative paper, in an aggressive way, that neither the criticism of Dr. Cole nor of Dr. Senn touches him or a word he has uttered. He did not know when he wrote this paper what they were going to say, yet he has disarmed their criticism and has effectually parried their stroke. From that lesson we take warning, and the people, as well as the attending physician, will attach importance to these words and admonish us that the surgical pendulum has swung to the extreme, and that uteri and ovaries have been sacrificed that might have been saved by either medical or conservative surgical treatment. I am pleased with the paper from beginning to end. We see the sparkling diamonds of surgical thought crystallized and matured. We see from beginning to end science, surgery and sense.

DR. EDWIN WALKER, Evansville—The question of diagnosis has been hinted at, but I think our diagnosis should extend outside of the pelvis. Many of these recurrent cases have diseases which have nothing whatever to do with the sexual organs, and until we clearly recognize this and properly treat the cases we will never cure them. We all know there are a class of neurasthenics, who are often anxious to be operated on, and after having been treated surgically are no better than before. Many of the cases reported as incurable are not really pelvic diseases. The number of uteri which give trouble, after the removal of the appendages, it seems to me, must be small. From my own experience, I can recall but two cases, and in both of these there was a persistent purulent discharge. Neither of them has been operated on since. I think in both I recommended extirpation. But because in these rare instances we have such cases that are not cured, it is by no means a just conclusion that all should be treated by total extirpation. The point I wish particularly to make is that before a diagnosis is made our examinations should extend throughout the whole system, and not the pelvis alone.

DR. HENRY P. NEWMAN, Chicago—I regret that these conservative remarks were not injected earlier in our proceedings. Some sweeping statements have been made from time to time regarding radical operations performed for the relief of inflammatory diseases of women, and it is certainly to be deprecated. We are oftentimes in a position to be criticised, as we have been at this meeting by two prominent men. For that reason I am pleased to have heard Dr. Peterson's able and conservative paper. At the same time it is a very aggressive contribution. I like the tone of it and wish to thank the author for it.

DR. J. W. BOVEE, Washington, D. C.—I do not have a dread of the gonorrheal uterus, that the essayist has. It does not seem possible that this condition is beyond our aid. When a uterus is to be removed for the cure of a diseased condition, if the gonococcus travels through the walls, how can we feel any safer in removing the uterus for gonorrhea than in removing it for cancer? It may be, that I have had a unique experience, because it is a revelation to me that there is so much

evil resulting from this class of work, or in following this class of procedures. I have not had bad results following abdominal section.

DR. RUFUS B. HALL, Cincinnati—I endorse the sentiment and views expressed by Dr. Peterson most heartily.

DR. PETERSON—I am very much obliged to the members for their complimentary remarks, but I wish the paper had been more freely discussed and not complimented so much. We are continually meeting with this question which we have to solve at the operating table, and while it is easier perhaps to adopt a universal rule, still it does not seem to me as though along these lines our department of science will progress.

Dr. Bovee spoke about the fear of the gonorrheal uterus. Possibly he misinterpreted some of my quotations from Schauta. I simply said that the investigations of this man and others have shown that where the gonococci penetrate into the muscular tissue, they leave such a damaged condition that it is difficult to cure the cases by curettage. By these investigations we are enabled to compare the ravages produced by the gonococci, the streptococci and the staphylococci. The inflammation is entirely different from cancer.

VAGINAL VERSUS ABDOMINAL SECTION FOR SMALL TUMORS AND PUS IN THE PELVIS.

DISCUSSION.

DR. R. S. SUTTON, Pittsburg—It is especially appropriate that this discussion should take place in the former home of Robert Battey, whom we all revered, and who has passed to his final reward for the noble services which he extended to suffering women. His first conceptions led him to remove the ovaries by the vaginal route, and it is especially gratifying to American surgeons that this route is still held by all as a proper one, and by many as the better one in suitable cases. The question of this route or the upper or abdominal route for the removal of pus tubes is the one first before us. The advantages of the vaginal route are multiple. The removal of the uterus with the suppurating appendages opens the way to perfect drainage. It also disposes of an organ which is pathologic and useless, and which if left may afterward become the seat of other pathologic changes. The rate of mortality for the removal of pus tubes by this route is exceedingly low, probably in good hands not above 3 per cent. The objections to an abdominal wound are removed and the convalescence of the patients is remarkably short and free from febrile features. The point on which many are at variance is the disposition of the uterus. I hold that the whole question hinges upon the pathologic condition of the uterus itself. If the uterus is a focus of infection, loaded with pathologic germs, such as the gonococci or bacillus tuberculosis, streptococci or staphylococci, it should be removed with the appendages, and no portion of it should be left. I hold further that a uterus deprived of the ovaries and tubes is a useless organ. That it may become, if left, a future incubator for cancer cells, gonorrheal or tubercular germs, and is quite as dangerous, or more so, than the appendix vermiformis, which surgeons do not hesitate to remove for prophylactic reasons. We have been told that we might as well remove the penis after male castration as the uterus after removal of the ovaries. The cases are not analogous. The anatomic construction of the uterus and penis are not alike, they are not equally liable to the same diseases, and their position with reference to the bladder is totally different. The uterus lies hidden in the pelvis, behind the bladder. The penis is attached to the bladder in front, and every few hours it is thoroughly washed out by the urine discharged from the bladder. It is impossible that it should harbor and incubate pathologic germs to the extent that the retained uterus may do. It is probable that Jacobs and others are right in fixing the causes of diseased appendages about as follows: 75 per cent. for gonorrheal infection, 10 per cent. for tubercular, and 15 per cent. of extraneous or other causes, including cancer. In addition to the occurrence of pus in the tubes, we may have abscesses form in the pelvic cellular tissue, the infection entering abrasions and being conveyed by the lymphatics. By the vaginal route, then, collections may be reached without disturbing the uterus. I urge that an infected uterus should be taken out with the appendages, and that a uterus deprived of them is of no use and is dangerous; that its removal adds greater safety to the operation.

As to the question of the removal of fibroids by the vaginal route: Large fibroids should be removed by the abdominal route by the method laid down by Crobak, and popularized in this country by Baer. Submucous fibroids may generally be safely enucleated per vaginam. Pediculated fibroids, as a rule, large or small, are better attacked by the abdominal route. But what of the small fibroids affecting the wall of the uterus? I do not believe that we have a right to deliberately destroy a uterus by either route in all such cases. Such tumors may often be shelled out and the woman afterward bear children.

But the President reminds me that my time is up. I will only say that the uterus bearing a small fibroid in its walls may be exposed by anterior colpotomy, and that often the tumor may be incised and shelled out, and the uterus safely returned to the pelvic cavity.

DR. W. E. B. DAVIS, Birmingham, Ala.—The man who has executed much successful work through the vagina will be loathe to change, and *vice versa*. Both operations have a large field, and it is well that we have two routes by which to reach the diseases of these important organs.

Dr. Sutton rightly emphasized the fact that the choice of operation depends largely upon the decision as to the disposition of the uterus in bilateral diseases of the appendages. Undoubtedly the question hinges on this point, and he very properly devoted much of the time allowed him in its discussion. I agree with him that if the uterus is to be removed, when the bilateral operation is necessary, that the vaginal route should be selected in a large proportion of such cases. However, it should be the aim and pride of every surgeon to preserve everything consistent with thorough surgical work, and not to sacrifice important organs because it can be done with only small mortality. He and others tell us that the uterus has no function after the removal of the appendages, but they have not demonstrated this, and on the contrary we know that the sexual life of the woman is very much better preserved by leaving the uterus, and that the mental effect is also much better. A slow convalescence, or even a second operation is preferable to its removal unless very much diseased. It is a reflection on the correctness of the reports of complete recoveries of such a large percentage of cases by many most excellent surgeons, when the uterus was not removed, to accept the argument now being used in favor of hysterectomy in all these cases. I can not agree with Dr. Sutton that pus in the tubes is due to gonorrhea in 75 per cent. of cases. I think that puerperal infection is the cause of more than 50 per cent. Tubercular infection is rarely the cause and is not so important as his discussion would indicate. However, the importance which he attaches to gonorrhea is against his argument for the removal of the uterus, as the infection from this source is not deep, and can be removed with the curette. Because some patients are not completely cured by the removal of the appendages is no argument for hysterectomy in every case where the bilateral operation is required, for nearly all these can be relieved by a thorough curettage. Some large uteri will require in addition to this the ligation of the uterine arteries with a high amputation of the cervix; only a small number of cases will need hysterectomy.

Vaginal incision for the drainage of pus in the pelvis, not confined to the tubes, is a most valuable method of treatment, and has been practiced for a long time with gratifying results. A large percentage of these cases have required no further surgery. More recently large pus tubes and ovarian abscesses have been incised and drained through the vagina with permanent recoveries in a large proportion of cases. These are the very cases where the vaginal operation and hysterectomy have been recommended so highly by the French surgeons. Yet a large percentage can be relieved by vaginal incision and drainage. If not completely relieved, the patient's condition will be made better by getting rid of the pus, and later on an abdominal operation can be done and the patient cured by the removal of the appendages, and perhaps of one side only. The uterus can nearly always be saved by this method of procedure. It is not best to do a radical abdominal operation at first, as recommended by the leader of the discussion. As to the mortality of the two methods it is very low in both and one possesses nothing over the other from that standpoint. The object of the surgeon now should be, not so much toward still further reducing the death rate from the operation, but to relieve these cases and preserve as far as possible organs which have so much to do with the woman's health and happiness. For that reason the abdominal operation is preferable, as the aid of positive sight is given, thus affording an opportunity for conservatism. It affords a wider field of operation and hemorrhage is more easily controlled. After the operation is commenced it can be changed to suit the conditions found, which could not be known before the abdomen is opened. Extensive adhesions can be much more readily dealt with. There is less danger of intestinal, vesical and ureteral fistulæ. There is less labor to the surgeon. More time is required for the patient to be out of bed, but the additional time thus spent is beneficial to these cases whose nervous systems have been greatly impressed by long suffering. It may be urged against the abdominal operation that a small number of cases of ventral hernia would follow. The scar is also an objection. In view of the great advantages furnished by the Trendelenburg position for positive diagnosis and thorough work we must all agree that the abdominal route has a field in pelvic surgery that can not be supplied by the vaginal operation. Very little was said by Dr. Sutton in regard to fibroids. I think if a fibroid is large enough to require removal that it can be better dealt with by the suprapubic operation.

Dr. J. W. Bovee, Washington, said he had been operating by both methods and had found that both are needed in this class of cases. A great many fibroid tumors may be operated on from below, as through the opening made in anterior colpotomy by the incision along the anterior vaginal wall meeting one that parallels the front wall of the cervix a growth having a diameter of four inches may be removed. So that for small fibroids in the anterior wall of the uterus the vaginal route is a very good one. There are also some pus cases in which it is absolutely necessary to take away the pus and yet not prolong the anesthetic and the operation. These demand a vaginal incision. They should not be classed with operations in which organs are removed. For ordinary pus cases, fibroid tumors of some size and nearly all intrapelvic diseases that require entering the peritoneal cavity he prefers the abdominal route because it is much the simpler and the cosmetic objections have no place in the work of good, clean surgeons. He does not believe it necessary to remove the uterus in but few of the cases in which the appendages are removed. His experience in this may have been unique for he had cured nearly all the cases he had operated on. He usually curetted first and then, putting the patient in proper position did the abdominal operation. If the patient is too weak for all this he curettes after recovery from the section. In many women the sexual sensation is greatest in the cervix and many of them do not feel that they are so much different from other women if they can touch the cervix with the finger. We can not completely ignore the ideas they have on these subjects. At the present time he employs drainage very little but may be led to use it more in the future than he has in the past. He believes that tuberculosis of the Fallopian tube is rarely primary and that usually it extends from the peritoneum to the tube and later infects the uterus. So that tubal peritonitis does not necessarily require removal of the uterus as Dr. Sutton would have us think. The very small per cent. of cases in which infection of the cellular tissue to the side of the uterus occurs need not be considered in this connection. To continue the ovarian function he has been in the habit of leaving at least a portion of an ovary whenever it was possible to do so, in all abdominal cases. It at least prevents the sudden onset of the menopause just when the woman is endeavoring to recuperate the powers that were so severely taxed during the progress of the disease for which the operation was necessary.

Dr. L. S. McMurtry, of Louisville—This discussion is limited to a choice between the abdominal and vaginal route in operating for inflammatory diseases of the uterus and its adnexa and for uterine fibro-myomata. We should never lose sight of the principles which should guide all operations here, requiring the greatest preservation of organs and functions consistent with thorough work and permanent cure. It is indeed a crude conception of surgery which would do away with a diseased organ or structure by amputation or complete excision. It is a higher standard of surgical art which, while removing diseased and disintegrated structures, preserves all organs capable of restoration to normal structural integrity. This is not sentiment, but a great principle of surgery which should be generally applied. To remove the uterus for suppurative disease of the uterine appendages, upon the basis that after the ovaries and tubes have become disintegrated the uterus is no longer useful, is a violation of this principle. I have seen uteri exhibited to societies which had been removed under these conditions, and which presented no evidences of positive inflammatory lesions, while the suppurating tubes and ovaries, with adhesions and multiple pus sacs, were left to the chances of gauze drainage. I submit that this is not good surgery, and although the patient may be symptomatically cured, the surgical work is neither thorough nor accurate. This operation in such a case is little more than drainage from below, which as a valuable life-saving temporary operation has been long recognized and applied in pelvic surgery.

The advantages of the supra-pubic incision are numerous and demonstrable. The facilities for a clean operation are greater than by the vagina. The danger of wounding bowel or bladder is much less. The abdominal route furnishes a field for open work where every step may be seen, and every danger and complication may be measured and dealt with intelligently. Ligation of vessels can be done deliberately and securely; adhesions separated, and previously unrecognized complications (such as appendicitis) properly treated. More complete and refined surgery can be done by the abdominal route than is possible by the vaginal approach. A more judicious operative scheme can be carried out and more careful application of conservative principles is possible. Moreover, when the operation is completed by abdominal section, the operator has a clear apprehension of the condition within to guide him throughout the subsequent management of the case. Experience of many operations and many operators, dealing with every phase and variety of disease, has demonstrated the efficacy of the abdominal route. Skilled and experienced operators have perfected operative methods which have stood the test of practical application. The objection urged against abdominal section that a scar is left as a reminder of an operation is trivial. In my own experience I have never known a patient to allude to this. The danger of hernia is not great.

In my observation and experience the shock is not severe in either operation ordinarily, and is about equal in the same grade of cases. The danger of injury to the hollow viscera is much greater by the vaginal route.

All these considerations apply with even greater force to operations for subperitoneal and interstitial uterine fibro-myomata of any size whatever requiring radical operation.

DR. JOSEPH EASTMAN, Indianapolis, thought the question of accurate diagnosis in these cases had been overlooked. It was very important; we must deal with facts and not fancies. He was surprised that Dr. Kelly advocated the partial removal of the uterus in these cases, whether done from above or below. If it is diseased, the whole of it should be removed and nothing left to carry infection. The decision as to the method to be employed must depend on the history of each individual case. He agreed with Dr. Kelly that a diseased appendix is frequently associated with diseased tubes, probably in 10 per cent., and possibly 25 per cent. He was also fully in accord with Dr. McMurtry that everything possible should be left. The vaginal route has advantages to recommend it in individual cases where the uterus is diseased as well as the tubes. He wished to protest against the discharge of patients as soon as the eighth day. He thought there is an analogy between the opening of the pelvis by either route, and much the same precautions should be used. There is no excuse for such extensive packing with gauze in the vaginal method as had been recommended. In many cases the wound could be closed as perfectly as in abdominal section, and that was the plan he had adopted with great success.

DR. I. S. STONE was surprised that attention had not been called to the selection of cases. Where the patient is very ill, suffering from sepsis, and can not endure the shock of an abdominal operation, a simple incision through the vagina as advocated by Dr. Noble was the only thing to do. He thought there was less shock in the vaginal operation. He thought the time would never come when the abdominal operation for fibroids would be discontinued.

DR. RUFUS B. HALL, Cincinnati, Ohio—I am of the opinion that the vaginal route will not be the one of election in fibroid tumors of the uterus, larger than an orange, after the enthusiasm of the operation has had time to abate. I know from practical experience that when the uterus is much enlarged from a fibroid it is difficult if not impossible to get working room and deliver the uterus without morcellement. The difficulties of this procedure contrasted with the ease and success attending the removal of tumors by the abdominal route has induced me to use the latter in all cases where hysterectomy was indicated and the tumor and uterus combined were too large to remove by the vaginal route without morcellement. I believe the vaginal route gives us a new means of operating in septic cases which are in no condition to be subjected to section. It places them in a position to be relieved of their septic condition by opening the abscess into the vagina. We can occasionally save the patient's life by so doing, and if necessary make a second operation later to remove the diseased organs. For many reasons I do not believe it is good practice to attack every case of suppuration in the ovaries and tubes through the vagina in preference to abdominal section. We must not loose sight of the fact that in many of these old pus cases, the bowel and omental adhesions need surgical attention for the relief of the patient. This can not be given as satisfactorily through the vaginal route as it can by the abdominal. How many times have you liberated a coil of ileum or an omental adhesion in approaching these pus cases by the abdominal route which needed the attention of the surgeon fully as much as the pus collection which caused them. It is a well recognized fact now that except in acute cases, very rarely is the pus infectious. Therefore, there is very little risk in chronic cases of infection from that cause and the argument used by the advocates of the vaginal route, that it will avoid infection is not of much moment. In all acute cases where the pus can be readily reached by the vaginal route, I prefer that, and in those desperate cases where we must temporize, as in those narrated by Dr. Noble yesterday, I would incise and drain and make a second operation later if necessary for relief.

DR. A. H. CORDIER, Kansas City, Mo.—The aim of the surgeon in the application of his methods is to obtain the maximum benefit with the minimum sacrifice of structures and the least amount of risk to life, and the saving of time and pain to the patient. These various results are best obtained by one surgeon by the following of a technique to him easy and successful, while another is equally successful in obtaining the same results by a procedure differing wholly or in part. With many surgeons the choice of operative procedure determines his success, while others possess that rare gift of making a success of any or all methods, and are to be congratulated and admired by those of less dexterity. Some never make a success of any method, and are constantly scanning the pages of foreign literature for something new to try. In this way much harm to surgery is wrought, and many lives lost. I would not be misunderstood on this point, as I do not in the least desire to place a depreciative stamp on any good and safe surgery, be it a foreign or home procedure, but I do desire to enter a protest in the matter of hastily accepting the revival of a class of surgical procedures discarded some time ago in this country, lately revived in part of Europe. I refer to the draining and partial removal of the diseased appendages, and the total removal of the uterus in cases of double tubal disease. It is perfect surgery, or as nearly perfect surgery as is possible, that all surgeons desire, but before accepting precepts involving human life or comfort all evidence should be brought to bear on the topic, duly analyzed and weighed for its proper worth. It is from this standpoint that the writer desires to discuss the subject of vaginal hystero-salpingo-oöphorectomy as described and practiced by many of the French and a few of our American gynecologists. Some men in other professions achieve renown by the mastership of their art; for instance, Paderewski, whose dexterous and delicate touch on the ivory keys of his piano has startled and charmed the people of two hemispheres. However, there is but one Paderewski. The limit and character of the pathology should form an indication as to the nature and extent of the surgical procedure. A flaccid and pus-infiltrated uterus, with, possibly, numerous foci, surrounded with pus-laden tubes and ovaries, should be removed, the choice of operative procedure being the one which, in the opinion of the surgeon, offers the most favorable conditions of immediate recovery from the operation, a permanent relief of the constitutional (septic) manifestations and the local symptoms resulting from the presence of these structures and the repair of the damage to surrounding organs wrought by their presence. In an old recurring puriform disease of the uterine adnexa, where the adhesions are well organized and where the intestinal, bladder and omental attachments are firm, the vaginal method would be fraught with more danger than the abdominal. These cases have established in part a peritonitic immunity by a prolonged and gradual process of auto-sero-therapy, consequently the abdominal method is not so liable to inaugurate an acute dangerous peritonitis or septicemia as is often the case in the acute or primary attacks if operated on. Some of the advocates of the vaginal method, only a short time ago, maintained that it was an admission of incomplete operation to use drainage, yet they advance the claim for good drainage by the vagina as an argument in favor of the vaginal route.

It has long been an established and demonstrable fact that in the majority of instances the uterus is capable of taking care of itself, and that it does not give rise to any trouble by its pres-

ence after the diseased appendages have been removed. I do not understand why an organ with a good and free natural drainage should not recover, and yet (as is claimed) an ovarian abscess or parts of diseased tubes with walls as thick and shaggy as a cocoanut recover with only an opening into the vagina.

The vaginal operation is not an easy one, neither is it as quickly performed as the suprapubic. In comparing the relative ease with which the manipulation can be carried on through an abdominal incision and an opening in the vaginal vault, it must be remembered that the bony resistance met with by the impinging of the hand against the pubes is unyielding, differing very much from the pliant muscle of the abdomen under anesthesia.

A small percentage of post-operative hernia is found following in a large series of abdominal incisions, but these are discovered by the patient and not by the surgeon, and are not of such frequent occurrence as to be used as an argument against the suprapubic incision. Time and close investigation of the vaginal cases will reveal an equal or larger amount of vaginal bowel protrusions.

1. The operation of vaginal salpingo-hysterectomy in many instances is incomplete; 2, it takes longer to perform it; 3, there is more danger from hemorrhage; 4, the uterus is removed in many instances where it should be saved.

Dr. E. E. Montgomery, Philadelphia—The object of all surgical procedures should be conservative; that no organ whose function could be maintained should be sacrificed. In dealing with pelvic disease we can not claim that any special procedure should be followed in every case to the exclusion of any other; that both the abdominal and the vaginal routes have their advantages in special cases. The vaginal procedure, however, is a conservative one, inasmuch as it enables us frequently to treat conditions without the sacrifice of the organ. It enables us to evacuate pus collections in the broad ligament on either side, or even in the tube, and after irrigation to pack the cavity, so that it subsequently becomes obliterated and the patient is relieved of the diseased condition without loss of function. In those cases in which both tubes are involved to such a degree as to render them functionally useless and their retention prejudicial to the health or life of the individual, none will question the wisdom of their removal. In such cases the infection has begun in the uterine endometrium and extended from it to the tubes and ovaries. The removal of the tubes does not, consequently, remove the entire diseased tissue. In some cases it will be found that pus extends down to and into the uterine end of the tube, so infected tissue remains after the removal of the tube. In all cases, the inflammation which has existed in the uterus has given rise to plastic exudation and enlargement of the organ, which subsequently produces distress and discomfort after the involution has been completed. The contraction of the walls, compressing the nerve filaments in the uterine structure, produces various hystero-neuroses of a distressing character, so that in every case in which it is desirable to remove both ovaries and tubes it is preferable the uterus should accompany it. Those who do this operation through the abdomen leave the vaginal portion of the cervix, forgetting that this has its own lymphatics, is subject to reinfection and in continued irritation may develop malignant disease. Where the tubes and ovaries alone are removed, we not unfrequently find patients suffering from hemorrhage of a regular or irregular character, purulent discharges, so that the patient may have to undergo a curettement in order to overcome the symptoms.

In the removal of the pelvic organs the vaginal route affords the preferable procedure, for the reason that through it we can thoroughly remove the uterus, ovaries and tubes with less interference with the abdominal viscera, than by the abdominal section. As the opening is made in the most dependent portion the drainage is more effective; no ligatures are used to be subsequently infected and keep up a sinus; convalescence of the patient is less uncomfortable and more rapid; the abdominal wound, cicatrix and sequelæ are avoided. The dangers of injuring the intestines and ureters are about equal in the two procedures. The abdominal method, however, affords the advantage that a better opportunity is given to repair damage.

DRAINAGE VERSUS RADICAL OPERATION IN THE TREATMENT OF LARGE PELVIC ABSCESSES.

Read in the Section on Obstetrics and Diseases of Women, at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY CHARLES P. NOBLE, M.D.

SURGEON-IN-CHIEF, KENSINGTON HOSPITAL FOR WOMEN.

PHILADELPHIA, PA.

It is my purpose in this paper to call attention to the value of drainage in the treatment of large pelvic abscesses, and to contrast the results which can be secured by this method of treatment with those which have been obtained by the more radical operation of abdominal section, together with the removal of the pus sacs—whether of ovarian, tubal or other origin.

It will be well, to avoid misapprehension, to point out that only a specific class of cases is under discussion. It is not my purpose to discuss the treatment of suppuration in the pelvis in women in general. The ordinary case of pyosalpinx or abscess of the ovary, chronic in character, is not considered. We are concerned to-day only with those cases of extensive suppuration in which, in general, in addition to pyosalpinx or abscess of the ovary, there exists an intraperitoneal abscess, and in which the pelvic viscera are matted together by extensive exudate; and very frequently, at the time the patient comes under the observation of the surgeon, active inflammatory or septic processes are going on, which have confined the patient to bed for weeks, so that she is greatly reduced in strength, and unprepared to resist the shock of a serious surgical operation.

Until May 1, 1894, I had never employed drainage without abdominal section in the treatment of this class of cases, but had always operated upon them by abdominal section and the removal of the diseased parts. This radical method of treatment has yielded in my hands, as it has in those of others, many brilliant cures, and others which were eminently satisfactory, although long continued; but, on the other hand, the mortality following this operation has been relatively high. Instead of a mortality of 5 per cent., it has been nearer 25. Every operator of experience, with whose results I am familiar, has had in dealing with this class of cases, similar results; hence, I believe, it is unnecessary to further elaborate the present status of the treatment of this class of cases by radical operation. Had we no other method of treatment the results obtained by this would be eminently satisfactory, as a spontaneous cure is a very rare event. Fortunately simple drainage, intelligently applied, has wrought a revolution in the results which can be obtained in that treatment.

Since May 1, 1894, I have operated by simple drainage, without a death, upon eight patients, each a typical and very marked example of the class of cases under consideration. Seven of these were very critically ill at the time of operation. They had been confined to bed with septic fever from three to eigh-

teen weeks, and I feel certain that if operated upon by abdominal section, at least six of the eight would have died of shock or septic peritonitis. A short history of each case is appended:

Case 1.—Mrs. X., a multipara, was seen in consultation with Dr. Dunn, May 1, 1894. Her last child was born March 27, 1894, and in the meantime she had suffered from a mild but persistent septic infection, which had resulted in the formation of a true pelvic abscess. The pus had burrowed along the inguinal canal, and was making its way to the surface of the groin. The patient was extremely feeble from the long continued sepsis, and in bad condition for a major operation. This case was treated by direct incision into the groin, with evacuation of the abscess. A thoroughly satisfactory but tedious convalescence resulted. Some months later Dr. Dunn informed me that this patient was entirely well.

Case 2.—Mrs. M., aged 23, a nullipara, was seen June 18, 1895, in consultation with Dr. Robinson. About a week before this her uterus had been dilated and curetted because of the existence of an endometritis and catarrhal salpingitis, with resulting sterility. Some days after the operation symptoms of peritonitis manifested themselves. The peritonitis was of moderate intensity, and it seemed not unlikely that the inflammation would undergo resolution. About June 24, it became evident that suppuration had taken place, and that pus was collecting in Douglas' pouch. At this time the patient's condition was very serious, so that a radical operation by abdominal section offered very little prospect of a favorable termination. On June 26, an incision was made into Douglas' pouch, and the abscess evacuated and washed out. A very satisfactory and rapid recovery followed, and since that time there have been no unpleasant pelvic symptoms. An examination, however, shows that the left tube is adherent.

Case 3.—Mrs. B., aged 30, 2 para, was delivered Oct. 24, 1895. The labor was tedious and instrumental. The first labor had been easy and the delivery spontaneous. During the second pregnancy there had been persistent and annoying pain in the right inguinal region. About thirty-six hours after labor, the patient had a chill, with a temperature of 103 or 104 degrees, and in spite of the treatment instituted, the temperature fluctuated between 99 and 100 degrees in the morning, and between 103 and 104 degrees in the afternoon, until November 12, when I saw her in consultation with Dr. Cross. At that time a well marked mass could be made out high up in the false pelvis and in the region of the cecum. The diagnosis lay between an appendicitis with an abscess and an abscess of puerperal origin. The absence of any history of foul smelling discharge from the uterus, and the fact that on examination the uterus and broad ligaments were not found abnormal, and especially that no exudate could be felt even high up in the pelvis, inclined me to accept a diagnosis of appendicitis, which had been arrived at by Dr. Cross. Operation was advised, and on the 13th a direct incision was made into the mass, evacuating a large amount of pus. Unfortunately the ileum was adherent under the point of incision, and was opened for a distance of half an inch, requiring suture. This patient was so weakened, as the result of the septic poisoning which had continued for eighteen days, that it was desirable to avoid a radical operation, as the prospect of recovery from a radical procedure was very unfavorable. A steady improvement followed the operation, but the sinus did not close, and it was evident that either a diseased appendix or uterine appendage must be removed in order to effect a cure. On March 2, Mrs. B. was operated upon by abdominal section, in the Kensington Hospital for Women, and the right uterine appendage was removed. The persistence of the sinus was due to the presence of a small pyosalpinx. She is now rapidly recovering her health and strength.

Case 4.—Mrs. L., aged 22, 2 para, was prematurely delivered November 20, by a midwife, of an eight-months child, which lived only a short time. November 28, she had a chill, and subsequently developed an inflammation in the right inguinal region. She was seen December 7 by Dr. Stoner, who found her much prostrated, complaining of general abdominal pain, most marked in the right iliac region. A small mass was detected upon pressure in the appendix region. Her temperature was 100 degrees, and pulse 112. Under treatment the general condition improved, but the mass in the iliac region increased in size. On December 11, I saw her in consultation with Dr. Stoner, and a very large mass in the appendix region could be made out. On this day the symptoms had become aggravated and an immediate operation was urged. Consent to this was refused, but on the following day she was taken to the Kensington Hospital for Women. In the meantime her condition had become worse, her pulse was above 130, and temperature 103 degrees. The peritonitis was evidently extending, and she was becoming decidedly septic. She was operated upon in the night. A direct incision was made over the mass, but adhesions had not formed between it and the abdominal wall. The general peritoneal cavity was packed off with gauze, the abscess cavity was opened and the pus evacuated. The abscess extended well up behind the cecum. No attempt was made to find the appendix. The abscess was drained with gauze and rubber tube. The patient's condition was no worse than before operation. During the night edema of the lungs developed, and the following day when the first urinary examination was made, it was found that acute nephritis was present, and the casts found indicated that the patient had been recovering from the nephritis of pregnancy before operation. The patient was so ill for ten days, that it was impossible to say whether she would rally, but she finally made a good recovery, and is now quite well.

Case 5.—Mrs. S., age 31, 5 para, was first seen Dec. 20, 1895. She had been in bed since September 21, and had a distinct history of ectopic pregnancy with rupture. She was quite feeble from the long continuance of the pelvic peritonitis, and had lost about fifty pounds in weight. Operation was advised, but for a time not accepted. January 1 she was admitted to the Kensington Hospital for Women, and on examination it was discovered that a sinus was present behind the cervix, through which the femur bone of a fetus was removed. As her condition improved for some days after admission, she was not operated upon until January 14, when the sinus was dilated and the vaginal wall incised, and a pelvic abscess in front and to the left of the rectum was washed out. Most of the fetus and clots had been discharged before the operation. She made an uninterrupted recovery, and at this time is doing full work and feeling well.

Case 6.—Mrs. K., aged 25, 1 para, was seen Jan. 28, 1896. She gave a history of inflammatory attacks extending over several years, and stated that she had been advised to have her ovaries removed. She had been bleeding irregularly since Nov. 8, 1895, and there was reason to believe that she had an early miscarriage at that time. Inflammatory symptoms had manifested themselves some three weeks before my visit, and had been growing steadily worse. She had had rigors, followed by a temperature of 105 degrees, and was decidedly septic. The pelvis was filled up with a large mass, more especially on the right side. Her condition grew steadily worse, and the peritonitis extended from the pelvis to the abdomen. On the 31st the pelvic abscess was incised from the vagina and a large amount of pus evacuated, Her convalescence was very satisfactory. She was out of bed in three weeks and has since steadily improved. The appendages are adherent and the history of the case indicates that it will be necessary to remove them to effect a cure.

Case 7.—Mrs. R., aged 40, 8 para, 2 miscarriages, last one Jan. 4, 1896, at the sixth week of development. The ovum was discharged after one day. She apparently had very little trouble, and was out of bed on the tenth day. About two weeks later she was seen by Dr. Walker. She had severe pain in the hypogastrium, and later in the left groin. At no time did she have much fever, but a persistently rapid pulse. I saw her with Dr. Walker on February 22. Her pulse was 120 and temperature 101 degrees, and a large mass was outlined between the uterus and bladder, extending into the left broad ligament, and in addition there was evidence of pus formation under the skin in the left groin, the exudate extending well up toward the ribs. The following day I made an incision in front of the cervix, pushed off the bladder from the uterus, and introduced my finger into an abscess cavity, which extended from slightly to the right of the cervix well over into the left broad ligament. About four ounces of pus was discharged. A second incision was made into the groin and a large abscess evacuated. The pus in this location had evidently burrowed along the round ligament, and was external to the abdominal muscles. The following day the temperature was 102 degrees, but the patient's condition was much better. She gradually improved, and the temperature and pulse became normal after three weeks. At this date she is entirely well and an examination shows that the left ovary and tube have escaped infection. Her pelvic organs are normal, with the exception of some old lacerations.

Case 8.—Mrs. B., aged 28, was delivered Dec. 18, 1895, at full term, of her first child. Marked hydramnion existed and about two gallons of liquor amnii was discharged. The patient was delivered instrumentally by Dr. Robinson, under full antiseptic precautions. A poorly developed child was delivered alive, who died of convulsions after two days. Forty-five minutes after delivery Mrs. B. was attacked with convulsions, which were very severe and persisted in spite of active treat-

ment, especially with the veratrum viride. The patient improved so far as the convulsions were concerned, but was much dazed mentally, and soon developed decided mania. On the fifth day there was a slight chill, and a decided one on the twelfth day. The lochia was normal throughout. The patient continued to be very ill physically and did not improve mentally. The temperature in the evening ranged from 101 to 104 degrees F. For a long time there was no tenderness or indications of inflammatory processes about the pelvis, but after the sixteenth day the abdomen became tympanitic. On the sixty-third day a mass was recognized behind, above, and to the left of the uterus, but there was no complaint of tenderness. I saw Mrs. B., with Dr. Robinson, on February 21 and advised operation, and on the 26th was able to reach the pus sac by vaginal incision, introducing the fingers well up behind the uterus, and puncturing the sac with scissors. A large amount of very offensive pus was discharged. The sac and pelvis were irrigated and a large gauze drain introduced into the pelvis. Improvement was manifested at once; within a week the mental condition was greatly improved, the insanity disappeared within two weeks; the temperature became normal after five days and remained so. The present condition of the patient is very satisfactory. The nature of the pus sac was not discovered.

A review of what has been accomplished in these cases, by this simple operation, will be of interest:

Case No. 3 has had a secondary operation to remove the pus sac. Her condition was most critical at the time of the drainage operation and the result of saving her life is eminently satisfactory. The other patients are feeling well and at least two of them are permanently cured.

Two of the cases, Nos. 1 and 7, were puerperal in origin, and the abscesses were of the broad ligament. Drainage from the vagina or loin will permanently cure all such cases. Heretofore I have made an exploratory abdominal section to definitely determine the condition of the uterine appendages. Hereafter I shall simply drain the abscesses when this is possible and save the patient the ventral incision.

The prospect for a permanent cure in two other cases is excellent. Case No. 4 may have a recurrence of appendicitis but where the abscess has been large frequently the appendix sloughs away, or is so infiltrated with pus that when resolution takes place it becomes obliterated. Case No. 5 has adherent appendages as the result of an extensive hematocele and exudate, due to the ruptured tubal pregnancy. But this sac has been drained and become obliterated. This patient feels perfectly well.

The remaining three patients feel and consider themselves well, but it is not unlikely that the diseased appendages which they have will give further trouble and require removal.

My own experience in the use of drainage, in the treatment of such cases, has been too limited to make profitable an expression of opinion as to the percentage of permanent cures which can be obtained. My advocacy of the operation is based upon the fact that it is a life-saving procedure, and that in a certain percentage of cases a permanent cure will be effected. By this method of treatment either a cure can be obtained with little or no risk to the patient, or a critical and highly dangerous operation can be avoided. At the very least, establishing drainage permits the patient to recover from sepsis, and to have her strength built up by judicious feeding and medication. If a radical operation be demanded, it can then be done when the patient is in a favorable instead of an unfavorable, or even a desperate condition.

DISCUSSION.

Dr. Joseph Price, Philadelphia—While Dr. Noble has directed special attention to pelvic abscesses and desires the exclusion of pus tubes and ovarian abscesses, at the same time he has introduced and discussed a number of other subjects. The management of abscess in cellular tissue, or in the pelvis, in the palmar or plantar fascia, is precisely the same. These is but one specific or radical treatment, that of incision and drainage. They are not enucleable and never have been. So it seems difficult to reconcile these points with many gynecologists. There seems to be an impression that a certain class of men have but one method of managing so-called pelvic abscesses, and have but one pathology; not so at all, nor has it ever been so. I am sorry that all abscesses are not of tubal and of ovarian nature in all parts of the body. We can not enucleate mammary abscesses in the axilla as we do pus tubes and ovarian abscesses. The removal of abscess is ideal treatment. Abscesses in cellular tissue in any part of the body should be treated by incision and drainage, and about all cases so treated recover. If you have an abscess in the cellular tissue of the pelvis, with matted viscera limiting it, there is but one treatment, and that is to free the matted viscera, and in that much you have done something that will relieve the condition, at the same time the result is death, for even after incision of these abscesses obstruction follows, or the symptoms remain permanent, and death follows from obstruction or advancing peritonitis, particularly in the puerperal cases. It is common in puerperal cases to find a puddle of pus, and in twenty-four hours the parts are covered with lymph, and a simple incision does not always save; but section, freeing the adherent bowel, with a thorough toilet with drainage from above and below, does save. You may find cases with black congested tubes, which should not be interfered with. There is nothing more to be done other than a thorough toilet, followed by drainage. If in those cases you arrest sepsis you save them. If you fail to do that, they all die. It is sepsis pure and simple. Just in that direction copious drainage, or free gauze drainage from above and below, or the so-called open wound treatment has been popularized, and I fear the profession fail to recognize what extensive drainage from above and below by the open treatment does. It simply arrests the progress of sepsis. It is copious drainage, and you find some recently reported cases of that character. I might allude to a case recently reported by Dr. Hare, of Philadelphia. The boy was taken ill on Friday evening. Dr. Hare saw him at half past seven Saturday evening with well-marked trouble about the head of the cecum. He was vomiting, had a pulse of 120 to 160, condition alarming. He was taken hurriedly to the hospital, his abdomen opened, a gangrenous appendix removed, and a toilet made of his whole peritoneal cavity. The patient had all the symptoms of a severe general septic peritonitis. His condition seemed hopeless. After a thorough toilet the symptoms improved, and within thirty-six hours after operation the drainage tube was removed and the abdomen closed. Symptoms again became alarming. Arrest of sepsis had primarily taken place, but it was not continued by drainage. After the removal of the drains again symptoms of sepsis developed and the incision was reopened, drainage reëstablished sepsis arrested, and the boy recovered. None of us surely will question the fact that this was not a case of septic peritonitis. Drs. Keen and Hare are both abundantly capable of determining that fact. I allude to this case in order to emphasize those points that have been brought out, because so many practitioners say that cases of general purulent septic peritonitis are not saved. I can refer them to suppurative forms of general peritonitis where we have saved nearly all of them. We have but little fear of pus in the pelvic cavity. I have many times seen the peritoneal cavity deluged with pus.

Dr. W. E. B. Davis, Birmingham, Ala.—I am sure we all appreciate the paper which has been presented by Dr. Noble, because it emphasizes a surgical procedure that has been adopted and resorted to for a long time. It is life-saving when

further surgery would endanger the life of the patient, for as Dr. Price said on a previous occasion, "It takes but a feather's weight to depress the beam," in such cases. Usually these cases have been confined to bed for weeks and to do anything more than evacuate the pus and relieve the septic condition is dangerous. And while this is an incomplete procedure and should be so explained to the patient, and that a more thorough operation will be required later, still a certain percentage of the patients will be cured. There may be some adhesions left behind, some trouble still in the tube, but they are practically cured. A radical operation in a large number of cases will have to be done later. This should be borne in mind and impressed upon the patient.

As to the adhesions to which Dr. Price refers, in cases of puerperal infection the adhesions to the omentum and intestine, after the pus is evacuated, give way. I have opened the abdomen and found very few adhesions. In one case I opened a large abscess of the right tube which had its origin in puerperal infection. The woman had a pulse of 140 to 150, she came near dying from the evacuation of this pus, but recovered; had no more unpleasant symptoms, and was delivered of a child some three years later.

DR. W. G. MACDONALD, Albany—The cases which have been so clearly reported by Dr. Noble, belong to a class which may be said to be neglected cases of accumulations of pus either in the pelvis or about the head of the cecum. I quite agree with him as to the benefit derived from the operation which he has done, yet at the same time I do not believe it will cure his patients in the majority of cases. Probably in the case of appendicitis, where he has opened and drained these abscesses it will be the last of the appendix, but not always so. I have found it necessary under similar conditions to resort to secondary operations after some months to remove the stump of the appendix. It would astonish many men if they had a large area of induration in the right iliac fossa to find after six months there were very few adhesions.

A number of years ago Dr. Clinton Cushing recommended a procedure which Dr. Noble has described. He presented a dilating trocar and referred to a method of drainage by douching. I have employed for some time that method in suitable cases. I have put drainage tubes between the dilating trocar and kept them in four or five weeks, and have seen cavities evacuated. I then took out the drainage tube, and at the end of three months there was a relapse, and I had to repeat the operation. Finally I have been compelled to remove the uterine appendage on that side by making a clean abdominal section. But I do gain this advantage, in that my patient is in a better general condition. This is not always true. Only a few days since I had occasion to operate on a case of pelvic abscess due to puerperal sepsis. I made an incision through the abdominal wall just parallel with Poupart's ligament. The abscess presented there, so that I did not include very much of the peritoneum. The abscess had several pockets which I evacuated and drained. The difficulties of abdominal section in the removal of the uterine appendages are not great. I have made a considerable number of abdominal sections in those cases, and I have not experienced serious difficulty in removing the damaged appendages.

DR. E. E. MONTGOMERY, Philadelphia—It is true, as has been said, that this procedure does not always result in cure of the cases, that we can not promise as much for it as the more radical procedure, and we must necessarily subject the patient to a more radical operation in order to effect an absolute cure. But this method affords us a means of treating cases which would otherwise be exceedingly dangerous to treat by radical procedure, cases that are so depressed, in which the condition of debility is so marked that we can not hope for a favorable result if we proceed to a radical operation at the time. It also affords an opportunity for curing some cases and preventing a sacrificial operation, where if the abdominal method were resorted to it would be necessary to remove the organs in their entirety. Whether the abscess be in the cellular tissue, broad ligament, or tube, and there is a large accumulation, and the tube is distended at the expense of the broad ligament, so that we can determine pus on one side of the pelvis, and the symptoms indicate that it is inflammatory, we are enabled to evacuate the pus, wash out the cavity, or practically curette or scrape it before thoroughly removing the diseased tissue, then packing it with gauze to bring about contraction of the abscess cavity and subsequent obliteration. A mistake is often made in the treatment of these cases in making too small an opening. For instance, in using a trocar and passing through it a drainage tube. It is preferable to make a free incision across the posterior surface of the vagina, opening into the broad ligament and operating through it, pushing the ureters aside, making a free opening into the sac, subsequently packing it with gauze in order to bring about its obliteration. I have been practicing this method for a number of years and have seen cases recover from the operation where there were large collections of pus, where the operation through the abdominal cavity would have been dangerous, and very little trouble has resulted to the patient during convalescence.

PHARMACEUTIC NOTES.

Read in the Section on Materia Medica and Pharmacy, at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY EDGAR L. PATCH.

BOSTON, MASS.

Liquid Extract of Malt.—"What value have the liquid extracts of malt of the market that is not possessed by the common beers, ale, lager and porter?" This question has been frequently asked us. We give the results of the examination of several prominent market makes in comparison.

	Extract. Per cent.	Alcohol. Per cent.	Converting power.
No. 1,	10	3.59	none
No. 2,	10.1	5.33	none
No. 3,	14.7	2.34	none
No. 4,	10	6.45	none
No. 5,	10	4.86	none
No. 6,	7	3.47	none
No. 7,	8	3.8	none
Lager,	5 to 9	3.5 to 5	none
Ale,	6 to 10	10. to 14	none
Porter,	5 to 7	6. to 8	none

As these liquid extracts do not possess a particle of diastasic power it is not reasonable to suppose that they are of more value than any beer possessing the same proportion of extract and alcohol.

The thick, non-alcoholic extracts average to contain about 72 per cent. of solid extract and to convert from eight to eleven times their weight of starch. A fluid extract made from select malt by repercolation, using a menstruum of 18 per cent. alcohol by weight will contain about 13 per cent. alcohol, about 30 per cent. of solid extract and convert fifteen times its weight of starch.

Diluted with two parts of water it would be superior to any of the liquid extracts in all qualities but one. It would not be as agreeable in taste as the products prepared by direct fermentation.

Solution of Nuclein.—What shall the pharmacist dispense when this article is called for? No. 1 is an alcoholic solution and is said to be made from thyroid and thymus glands; dose, hypodermically, two to five minims diluted with water, price 85 per ounce. "Indicated to counteract a disorganized state of the blood." Two c.c.—0.001 residue, a little more

than 5-100 of 1 per cent. Gave no ppt. or change when diluted with water, the alcohol gently evaporated and the residue tested with Mayer's reagent.

No. 2.—Non-alcoholic solution made from yeast, slight brown, odor of carbolic acid. Two c.c.—0.041 residue or 2 5-100 per cent. Gives a slight precipitate with Mayer's reagent and gives test for albuminoids with Biuret test. Dose ten to eighty minims hypodermically as a non-poisonous germicide.

No. 3.—Colorless liquid, non-alcoholic. "Made from shad's roes." Two c.c.—0.005 residue, ¼ of 1 per cent. No ppt. with Mayer's reagent but gives yellow color. Does not respond to test for albuminoids. Price $2.50 per ounce.

Natural Sodium Salicylate.—"There is considerable variation in color, odor and taste of market products. What explanation can be offered?" When the salt is made by acting on the oil of wintergreen with solution of sodic hydroxid there is a possibility of the contact being insufficient or the temperature too low. In consequence a considerable quantity of sodium methyl salicylate is produced. This is a white powder, but neutralizing with an acid frees gaultheria oil and salicylic acid instead of salicylate acid only. We have seen samples that contained over 25 per cent. of sodium methyl salicylate.

The latest investigations of oils of gaultheria and birch by Dr. Fred. B. Power and Dr. Clemens Kleber demonstrate that the statement of many text-books that these oils contain 10 per cent. of a terpene C_{10} H_{16} is an error, and must have arisen from an examination of an oil adulterated with turpentine. Power and Kleber conclude that the true oil of wintergreen consists of 99 per cent. of methyl salicylate with fractions of 1 per cent. of a paraffin, an aldehyde or ketone, an apparently secondary alcohol and an ester. When *fresh* it has a left rotary power. Oil of sweet birch, commonly offered as gaultheria oil, consists of 99.8 per cent. of methyl salicylate, the remaining .2 per cent. being made up of the before-mentioned paraffin, an aldehyde or ketone and an ester, but does not contain any of the secondary alcohol. It is always optically inactive. The artificial oil of wintergreen is supposed to consist entirely of methyl salicylate.

It is said that the statement that natural oil separates at once in drops from water while artificial does not, is erroneous. It is doubtful if any ordinary observer can detect the presence of as much as 40 per cent. of synthetic oil added to the natural and the *natural* salicylate of sodium might possibly prove to have been made largely from an artificial oil. Why should any natural sodium salicylate made from oil of wintergreen completely converted possess any advantages over a pure product from any other source?

Kola Nut and Kola Wine.—Much has been written upon kola nut. It has been stated that the fresh nut does not contain caffein but that this alkaloid and theobromin are produced by the decomposition of a natural glucoside by a proteid ferment having diastasic power. Kola red and glucose are said to be produced at the same time. Heckel and Schlagdenhauffer give as the constituents of kola: Starch 33 to 37 per cent., cellulose 29 to 30 per cent., water and inert matter 22 per cent., tannin 1½ per cent., kola red 1¼ per cent., albuminoids 67 per cent. and caffein 1 to 2½ per cent.

We have obtained from different lots of dry kola 1.2, 1.5, 1.48, 2.2, 1.48, 1.88, 1.91, 1.52, 1.32, 1.6, 1.76 per cent. of caffein.

Fresh Jamaica kola nuts assayed .795 per cent. caffein. They contained 61.19 per cent. of water, so that the dried should yield 2.05 per cent. caffein. A portion of the fresh nuts dried rapidly at 60 degrees C. assayed, gave 2.16 per cent. caffein.

Three of the market kola wines assay as follows:

No. 1. Twenty-ounce bottle, alcohol 13.22 per cent. by weight; 6 per cent. of extractive and 0.036 of 1 per cent. caffein, equivalent to 2.25 per cent. of an average kola nut.

No. 2. Seventeen-ounce bottle, alcohol 13.81 per cent. by weight; 23 per cent. extractive including glycerin and 0.11 of 1 per cent. of caffein, equivalent to about 7 per cent. of an average kola nut.

No. 3. Sixteen-ounce bottle, alcohol 16 per cent. by weight; 12 per cent. of extractive and 0.198 of 1 per cent. caffein, equivalent to 12 per cent. of an average kola nut.

Ether.—Are the complaints frequently made concerning the value of ether due, as suggested by Dr Squibb, to different methods of use or inefficiency in administration? The same lot that is pronounced by several operators as superior in every respect is decried by others as "watery," "half alcohol," "weak," etc.

We were requested to supply different grades of ether to a skillful operator for trial, the samples to include an ether as nearly pure as possible. The samples were numbered and consisted of the following products:

No. 1. Two 4-oz cans, the contents having a specific gravity of .7420 at 25 degrees C., equivalent to 74 per cent. of absolute ether, 26 per cent. alcohol and water.

No. 2. Two 4-oz cans of 1890 ether specific gravity .7163 at 25 degrees C., equivalent to about 95 per cent. absolute ether.

No. 3. A carefully distilled concentrated ether of specific gravity 0.7150 at 25 degrees C., was shaken repeatedly with distilled water during twenty-four hours, separated, added to 10 per cent. of its weight of quick lime and 10 per cent. of its weight of potassic carbonate recently dried at 125 degrees C., shaken frequently, decanted and fractioned by distillation, that fraction having a gravity of 0.7110 at 25 degrees C., and corresponding to over 98 per cent. of absolute ether being submitted for trial.

No. 4. A second lot prepared the same as No. 3 from Squibb's ether, of specific gravity 0.7146 at 25 degrees C., (95.35 per cent.) and giving a product testing the same as No. 3—about 92.06 per cent. absolute ether.

No. 5. Prepared as No. 3, using quicklime alone, and giving a product of specific gravity 0.7109 at 25 degrees C., equivalent to about 98.13 per cent. absolute ether.

No. 6. Prepared as No. 3, using dried potassic carbonate alone, and giving a product of specific gravity .7104 at 25 degrees C., equivalent to 98.51 per cent. absolute ether.

(A small amount of yellow liquid remaining after distilling each lot of ether, that evaporated from filter paper, left an unpleasant odor resembling that of cyanids or bitter almond.)

The surgeon reported: "No appreciable difference could be observed in the action of the different lots. In comparison with Squibb's ether, we were impressed that it was somewhat more bland, *i. e.*, seemed to have rather less irritating effect upon the respiratory mucous membrane.

"Very careful records were kept of every patient upon whom we made the tests. I still have the feeling that ether of superior quality to anything now in the market may be produced by using chemically pure materials to start with. If I could have a sufficent supply to carry me through a year of surgical work, which would aggregate between two and three hundred anesthetizations, I think I could draw conclusions which would be of some value."

It is interesting to note the specific gravity accepted as correct for absolute ether at 25 degrees C. by different authorities:

Dumas and Boullay, 0.70737; Sassure and Thenard, 0.70987; Gay Lussac, 0.71190; Kopp, 0.7084; Watt and Wurtz, 0.70891; Mendeljiff, 0.70826; Allen, 0.71000; Roscoe and Schorlemmer, 0.70750; Dr. E. R. Squibb, 0.70842.

MODERN METHODS OF TREATMENT OF TYPHOID FEVER CRITICALLY REVIEWED, WITH SUGGESTIONS FOR A RATIONAL THERAPEUSIS.

BY GUSTAVUS M. BLECH, A.B., M.D.
DETROIT, MICH.

Motto: Im Erkennen und Heilen der Krankheiten liegt die Aufgabe der Medicin. Das Erkennen allein ist Wissenschaft; das Heilen war bisher Empirie und wird es noch lange bleiben.—*Hyrtl.*

There is hardly any other disease to which the above, written by the immortal Austrian anatomist, could be better applied than to typhoid fever. The dignity, the value of all scientific work and research, lies in the recognition of this malady and its pathology—not in its therapeusis. The more there is written to enlighten the profession in that respect, the better for us. The devising of new formulæ or new methods of treatment can never add much to the reputation of the prospective discoverer (?) Typhoid fever patients have recovered without any treatment whatever; others have died, and probably will die, under the most rational and scientific therapeusis.

Infallible methods exist only in the minds of their promoters and advocates. The number of methods, sub-methods and modifications is as large as that of bivalve vaginal specula which are baptized after their modifiers, the modification often consisting only in the different shape of an unimportant screw or handle. In this article only those methods will be considered which have acquired some popularity, or which have really a scientific value.

A priori, typhoid fever does not always appear as that dreadful constitutional disease described in textbooks; there are light forms of short duration. Individuals of regular habits will offer a good deal of resistance, the fight between the disease and the system being even, while others, especially alcoholic drinkers or those with prostrated or affected nervous systems, will succumb immediately. Again, the age, the previous history and the present status of the patient, all need to be considered, and will indicate the course of treatment that should be pursued. We should not treat diseases the same way the cook prepares a certain soup, after a receipt; we claim to be scientific physicians, and as such will have to use our own judgment in each individual case. A specific for typhoid fever has not been discovered as yet. However, we have made of late some advance in the knowledge of the treatment, and can truly assert that our methods of to-day, if properly applied, are more scientific and more effective than the symptomatic treatment of ten or fifteen years ago.

We will first of all consider the treatment of typhoid fever with water.

Balneo- and Hydro-therapy.—This system, especially when carried out in the rigid manner advocated by Brand, who gave it to the profession, influences the entire course of the disease, reducing the mortality to a minimum, preventing complications (especially affections of the respiratory tract), and now stands ahead of all other therapeutic measures. Hydro-, especially balneo-therapy, has its opponents, one of the objections being that cold bathing is cruel, and can hardly be carried out in private practice. There is much truth in the criticism, and many general practitioners have often been compelled to let patients die from hyperpyrexia, owing to their prejudice or poverty. If the full cold baths be objected to, we can immerse the patient in lukewarm water and let the water gradually cool. Dr. L. E. Maire,[1] of this city, when a general practitioner, obtained good results from full baths with hot water. Where the procedure can not be carried out, the wet pack will prove of great help, although it is not as efficient as the full bath. But in no case of typhoid fever, should regular sponging of the body be neglected. I use in my practice a 10 to 20 per cent. aqueous solution of alcohol. Balneo-therapy will not only reduce the temperature but influence the entire nervous system. Strümpell[2] is right when he asserts that under balneo-therapeutic measures the grave "status typhosus" is much rarer than otherwise.

The details of bathing can not be given here; in fact, the condition of the patient and his surroundings will dictate to what extent and degree this method of treatment should be employed. In mild cases sponging of the whole body is sufficient.

The Abortive Treatment.—The theory that typhoid fever can be aborted is not of recent date. Wunderlich[2] believes that if at the onset of the disease a few large doses of calomel were administered, the disease could be aborted. His assertions, however, are very conservative, and he is not so sure of being able to abort *every* case as some modern writers are. *A priori*, typhoid fever aborts spontaneously in some cases, without any interference whatever. The so-called typhus levissimus runs a mild and short course. If such a case came under the care of the authors referred to, they would surely attribute the short course of the disease to the drugs they have "fired" into the stomach of their patient. When reviewing the statistics of their reports, this should always be borne in mind.

Dr. Aulde, of Philadelphia, editor of the *American Therapist*, asserts that he can abort typhoid fever with arsenite of copper. His paper was read only in part at the last meeting of the Mississippi Valley Medical Association. The writer has no experience with this drug. Dr. Aulde's assertions have not been verified by competent authorities in medical literature.

Dr. Woodbridge, of Youngstown, Ohio, has proclaimed himself a pioneer of the jugulant treatment of typhoid fever, and states that if he sees a case early he can undoubtedly abort it, and that death is a wholly unnecessary consequence, for which the physician is to be blamed. It is natural that such assertions must cause some excitement, although at the above mentioned meeting, his theories were received

by a large body of eminent physicians with disbelief and skepticism. He calls his system after his own name. It consists of tablets and soft elastic capsules containing small doses of calomel, thymol, menthol, guaiacol, podophyllin and eucalyptol, of which he administers one every fifteen minutes.

What is more startling is that he allows his patients to eat what they please and to attend to their business affairs while sick! His tablets and capsules are put up and sold by Messrs. Parke, Davis & Co., of Detroit, who send reprints of his various articles to every physian free of charge and distribute them "*en masse*" among students of medical colleges. Dr. Woodbridge could never have gained so much popularity, had it not been for the action taken by Messrs. Parke, Davis & Co., and it is for this reason that I beg the reader's pardon for dwelling somewhat at length on his treatment. It is well for every one to send for his pamphlet, so as to verify the following criticisms:

Dr. Woodbridge is not the first one who has claimed that typhoid fever could be aborted. His formulæ are nothing but a combination of antiseptics and aperients which have been used singly for years by different physicians; the combination forms no new chemical. It is nothing but a "shot-gun" prescription. Similar preparations are already on the market, the well-known antiseptics sold under the trade names listerin, borin, pasteurin, euthymol, etc. He is not original. If Dr. Woodbridge expects us to accept his statistics, he must first prove to be a man who adheres to facts even in little things. He states in his publication that the discussion, which took place after his paper was read at the Mississippi Valley Medical Association, Sept. 4, 1895, lasted three hours; while in fact, including my own criticism, which was also the concluding remarks for my own paper, the discussion lasted thirty-five minutes only.

As regards the value of the formulæ, as intestinal antiseptic treatment, I fully appreciate them. There is nothing bad about them, unless it be that it is very unwise to prescribe his ingredients in tablet form, owing to the pungent taste and the volatility of some ingredients. All his formulæ ought to be put up in soft elastic capsules. To bother a typhoid fever patient every fifteen minutes, is an outrage. Why not give usual doses every three or four hours? The effect is the same. But Dr. Woodbridge regards rest as unnecessary. I trust that no sane physician, for the sake of his patients and his own reputation, will accept this theory of the uselessness of rest and dietetic restriction.

Dr. Woodbridge points with pride to the reports sent him by other physicians. Without casting any reflections on the standing of the reporters, I will merely say that, considered carefully, the reports are inexact, unreliable and far from satisfying the scientific reader.

In most cases we are compelled to accept their statement that they treated cases of typhoid fever. If my criticism has been harsh, I will cite two of the reports which will amuse us:

One physician reports a case in which he observed the usual prodromes. Highest temperature 103.4 degrees; no delirium, no eruption; cure in seven days! *O tempora, O mores!* Another physician reports a case of two weeks' standing, after which he was called in. He gave one tablet and the patient improved immediately after the first dose. It must be borne in mind that the second dose had to be administered fifteen minutes after the first one. The abortive treatment as such is valueless; the title antiseptic treatment, however, is justified.

Antiseptic Treatment.—According to modern views, typhoid fever is considered a microbian disease, caused probably by Eberth's bacillus typhosus. Most of these germs gain entrance into the human system, multiply in suitable soil and develop toxins, causing a general infection of the entire system.

By internal administration of antiseptics and chemicals the action of the germs is neutralized, their powers of multiplication and toxin production destroyed, thus giving the system an opportunity to eliminate the noxious toxins already produced. Pathology teaches that typhoid fever, as far as local lesions are concerned, is principally an intestinal affection, hence intestinal antiseptics are indicated. Bouchard[6] urges us to employ general as well as intestinal antisepsis.

This at best is theory only. The writer has practiced, and intends to practice, antiseptic therapeutics in affections now generally accepted as of microbian origin. But he frankly admits that he does so, not from blind belief in the correctness of the above quoted theory, but because it is the duty of every physician to leave nothing undone that might save the lives of his patients or prove of benefit to their sufferings, as no harm can follow from a judicious administration of antiseptics.

Trouessart[3] complains that antisepsis has not received general acceptance in internal medicine, while it is indispensable in all surgical procedures. That was so two or three years ago. To-day, chemic antisepsis is entirely discarded by modern surgeons. Even in septic wounds the antiseptic measures taken are not those formerly used. Modern surgeons state that wounds ought to be treated "aseptically." This is not the proper term.[4] Modern antisepsis in surgery does not consist of the employment of strong and toxic chemicals, but mild measures are used, such as sterilization, normal salt solution, peroxid of hydrogen, etc. The reason for this change is that carbolic acid, mercury, etc., in solutions usually employed, have been found to have very little influence on the microbes, and that wounds, even of a septic character, heal just as rapidly and just as nicely under a less rigorous antisepsis. If such is the case in surgery, the present fad for killing the germs through general counter-intoxication, will have to give place to a less serious medication.

In looking over the list of antiseptics one is impressed with the large number. Almost every drug, beginning with ordinary household coffee (in infusion) and ending with a saline cathartic has been found to be a direct or indirect antiseptic. And now the old-fashioned treatment of malaria with quinin, rheumatism with salicylates, and syphilis with mercury, has been found to be nothing but the antiseptic treatment of those affections. What is in a name? And now modern surgery has taught us that salicylate of soda has but a slight antiseptic power! If the typhoid fever bacillus is so easily neutralized by guaiacol carbonate, that Dr. Woodbridge, or others, have succeeded in bringing typhoid fever patients to an almost normal state, as far as the symptoms of a general intoxication are concerned, in twenty-four hours, why, I ask, does the same drug not kill the malaria organism or the as yet undiscovered and unbaptized but sure to exist bacillus rheumaticus?

That it does not I can testify from clinical experience. In several cases of malaria, for a few days, various antiseptics (guaiacol carbonate, carbolic acid, calomel, iodin) were tried with no effect. A hypodermic injection of the arsenite of quinin was sufficient to stop the chills.

In acute inflammatory rheumatism the salicylate of sodium, in spite of the fact that it has but slight, if any, antiseptic power, has proven of greater benefit than any of the above-mentioned antiseptics. Is rheumatism after all then a non-microbian disease? Colchicin has proven to have no antiseptic power whatever, and still one must be astonished to read in French literature the results obtained from its use in various rheumatic affections.

I have a large number of cases of chronic rheumatism, deforming and non-deforming under my care, and the administration of general antiseptics has produced no marked results within four weeks. Generally in private practice I can control chronic rheumatism with large doses of natrium salicylicum in about ten days.

If microbes are the cause of disease and they are destroyed by antiseptics, then consumption will soon be as much a curable disease as typhoid fever.

When such an eminent man as Osler, with his unusually large opportunities for observation in one of the largest hospitals in the world, testifies to the inefficiency of the antiseptic treatment of typhoid fever[5] I must defer further discussions of "cause and treatment of microbian diseases" until further experiments can be carried out. It is to become my life study henceforth. The statement of the eminent Chicago surgeon, Nicholas Senn, at the last meeting of the AMERICAN MEDICAL ASSOCIATION that antiseptics fail when we mostly expect them to do the work, ought to have awakened the dormant thinking energy of many an intelligent practitioner.

It has been said that the antiseptic treatment influences considerably the typhoid fever curve. Most of the antiseptics are antipyretics and vice versa, and the fever could probably be controlled just as well by the continuous administration of small doses of quinin or acetanilid, which antipyretics have but slight depressing action on the heart. That the fever curve is considerably lowered by a systematic treatment with water is well known.

The hygienic and dietetic treatment of typhoid fever forms an essential part of the general management of such cases. It would be too much risk, however, to abandon all other means of treatment and to rely solely on the dietetic, as has been advocated by some believers in the *vis medicatrix naturæ*. In mild cases it may be sufficient, but who can tell whether a given case is to remain as mild as it appears in the beginning? *Non medicamentis sed medica mentis* is a very good sophism, but I fail to see why it should be the motto solely of doctors, "à la Kneipp." It ought to be, and in fact is, the motto of every drug practitioner. As regards hygienic treatment it can be framed in four words: Rest, a good bed, ventilation and an intelligent nurse. The diet of typhoid fever should be light, liquid and nutritious. Meat, ordinary bread and raw fruits, especially apples and pears are to be strictly prohibited.

The patient should drink cold, fresh water freely. I allow my patients from ten to twenty glasses *pro die* and would give them more if they so desired. The water can be acidulated with hydrochloric acid, lemon or peroxid of hydrogen (or hydrozone) alternately. Alcohol should be given early. I am surprised that most of the latest writers restrict its use to cases where direct stimulation only is indicated, as it is a medicine and food at the same time.

The key note of the dietetic treatment is nutrition. For more than a century plain cow's milk has been used. But plain cow's milk has many disadvantages, deranging the digestion and necessitating repeated macroscopic and microscopic examinations of the stools. These objections can be ovorcome by the addition of Mellin's food. This food, although hardly needing any further recommendation, has proven to me of incalculable benefit not only in typhoid fever but in a great many other acute and chronic affections of the gastro-intestinal tract. The effects this preparation has on milk can be summed up as follows:

1. Owing to its alkalinity it acts chemically upon the casein of the milk, converting it into soluble albuminates.

2. The dextrin present is a powerful peptogen and greatly increases the secretion of pepsin from the stomach glands, by is physiologic action.

3. Clinical observation as well as chemic experiments have proven beyond doubt that if the food be added to cow's milk it is rendered more easy of digestion and more nutritious.

4. If necessary Mellin's food can be given with water instead of milk, with similar results.

Light soups, preparations of beef juices, beer and coffee, can be given in small doses.

Suggestions for a Rational Treatment.—After considering the former methods together with my own experience, I think I can propose a treatment, that although far from being infallible, will recommend itself to the thinking physician, as one that promises the most satisfactory results.

I divide the disease, for practical purposes into three stages: 1, the time when owing to certain symptoms and phenomena, the disease can be suspected only; 2, the time from the definite diagnosis of typhoid fever until convalescence; 3, convalescence plus two weeks.

The treatment as long as the disease is only suspected, consists of attending to the symptoms as they appear. To produce diuresis, diaphoresis and catharsis is the most rational procedure.

But as soon as a diagnosis of typhoid fever is made, all energy should be awakened.

Hygienic and hydro-therapeutic treatment must be outlined for the entire course of the disease and systematically commenced at once.

No matter what the condition of the bowels, the first two days, the following prescription is given.

℞. Calomel . . . . . gr. iii | 18
Salolis . . . . . ʒss. 16 |

Misce. F. pulv. No. VI. Sig.: One powder three times a day.

Then I commence with tonics, calculated not only to support vitality but to sustain the heart. Digitalis, strychnin, nitroglycerin are prescribed in suitable doses, and proper excipients administered at regular intervals. (Stearn's essence of pepsin is what I prefer.) For this reason I commence early with the administration of alcohol. French brandy (cognac) port or sherry wine are suitable. Recently I have obtained good results from the wine of fresh (undried) kola nuts, "kolavin-Stearns," which is not only a good tonic but a brain stimulant.

But one of the drugs on which I place much dependence is the peroxid of hydrogen. Care should be taken to obtain the strongest and best brand, as most of them sold in this country are poor imitations of even what the Pharmacopeia prescribes and that is weak enough. Hydrozone, as prepared by the New York chemist, Charles Marchand, is at this date recognized as the best in every respect being a 30 volume solution. It is best administered in teaspoonful doses (to be measured with a glass spoon only) in the water used as drink three or four times a day. I also add some hydrozone to the water used for washing the colon. The effects of hydrozone when administered in typhoid fever are these:

1. It oxygenates the blood, thus keeping the brains in activity. It is a brain tonic. If hydrozone be given properly all cerebral disturbances, delirium, that state of semi-unconsciousness which most of our patients pass through will be a "rara avis." 2. It improves digestion and checks abnormal fermentation. 3. It stimulates exertion. 4. Mechanically it cleanses the bowels, allays the hyperemia, prevents ulceration, and assists in "disinfecting" the contents of the gastro-intestinal tract. 5. It is as powerful an antiseptic as creosote and carbolic acid without possessing any of their disadvantages.

A useful procedure is irrigation of the colon, which should be practiced twice daily in cases of typhoid fever. It matters little whether the fluid passes beyond the ileo-cecal valve or not, for either through reflex action or through the aseptic state of the rectum, the state of the bowels is greatly improved by the irrigation throughout the disease. It produces a natural catharsis. Only when an emaciating diarrhea exists (a case I never observed) I would substitute sugar of lead and opium and then would not irrigate but inject the fluid as a simple clysma. A stiff rectal rubber tube attached to a fountain syringe is the best means for irrigation. Soft rubber is not to be used as it lodges in the mucous folds of the rectal wall and bends over.

A metal sigmoid flexure irrigator has been devised by Dr. Cole. It is manufactured by Messrs. Halsey Bros. of Chicago, to whom I am indebted for the accompanying cut, which represents about one-third the actual size. On my suggestion they now manufacture smaller nozzles for children, which can be easily screwed on the instrument. This instrument has proved of great use in my hands, as it can be easily introduced into the sigmoid.

This treatment is routine in my practice. Depending on circumstances it is altered in minor points. Special symptoms call for special medication. This article is an incomplete pen sketch rather than a treatise on the treatment of typhoid fever. It is intended to cause the general practitioner to think, not to copy formulæ.

LITERARY REFERENCES.

[1] The Physician and Surgeon. Vol. XVIII, No. 4. (Discussion.)
[2] Lehrbuch der speciellen Pathologie und Therapie der inneren Krankheiten. Leipzig: Vogel, 1889.
[3] Antiseptic Therapeutics. English transl. by Dr. Ward. Detroit: Geo. S. Davis, 1893.
[4] G. Blech. What is asepsis? New York Med. Journal. Vol. LXII, No. 12.
[5] Practice of Medicine. New York: D. Appleton & Co. 1894.
[6] Lectures on Auto-intoxication in Disease. English by Dr. Thomas Oliver. Philadelphia: The F. A. Davis Co. 1894.

TREATMENT OF TYPHOID FEVER.

BY F. M. GREENE, M.D.
LEXINGTON, KY.

Before continuing the discussion, on the disinfectant and eliminative treatment of typhoid fever, which was presented in a former paper, we wish to notice some criticisms upon this method read at the last meeting of the AMERICAN MEDICAL ASSOCIATION at Atlanta. The distinguished chairman of the section on general medicine, attacks rather severely, the advocates of the new method, calling them "heretics of the worst possible stamp," because they do not choose to "swim in his puddle with him." Being himself an advocate of hydrotherapy of most enthusiastic stamp, he takes issue with all those who differ from him, and triumphantly declares it "impossible to disinfect 25 feet of intestinal canal, with such remedies as Woodbridge recommends." He may find before getting through with the discussion of this important subject that there are "more things in heaven and earth than are dreamt of in his philosphy"; also that there are more than "two grains of wheat in his two bushels of chaff." His late work on the Practice of Medicine, lies on the table before us, and we venture the assertion that he will not spoil the next edition of his "jewel" by omitting a full description of the new method of treating typhoid fever. He may not then regard the papers which have hitherto appeared in the JOURNAL of the ASSOCIATION on the subject, as a "heterogeneous jumble, entirely unworthy of the best traditions of the profession, and of a subject connected with the names of Bartlett, Gerhard, Jackson and Flint." He might have added also the name of George B. Wood, who first called attention to the value of oil of turpentine in this disease. We had the pleasure of listening to the clinic lectures of both Gerhard and Wood on typhoid fever, and believe that were they with us to-day, they would be found in the front ranks of antiseptic medicine. The latter had discovered an intravascular disinfectant of great value, without being able to explain its "modus operandi."

We agree with Dr. Osler that "all wisdom is not found in the professorial corps" and that "a good thing may come out of Nazareth." Professor Quine from the chair of the section on the Practice of Medicine, was more considerate of the new method and reports "twenty-one consecutive cases, covering his private practice during the last two years," and which were treated antiseptically. Under the same treatment, he gives an account of 275 cases and 6 deaths; a mortality rate of 2.2 per cent. He does not claim however that "the Woodbridge method was employed in one of them." The plan of treatment followed consisted in a general way of purgatives to the extent of from two to six evacuations daily. The antiseptics used were a mixture of guiacol carbonate, thymol, menthol and eucalyptol—but not the Woodbridge formulæ. He declares: "Athough no death occurred, the results, especially in the direction of aborting the malady, albeit, not discouraging to one who had not expected much, were less brilliant than those recorded by our friend from Ohio."

Again—"It is not assured that this inconsequential showing proves anything"!! Were "reasons as plenty as blackberries" we would not ask Professor Quine to give us "a reason upon compulsion." Finally he concludes: "No one has the right to condemn the method without proof." We think an impartial reader of these criticisms, might conclude that the one is highly prejudiced against, and the other favorably inclined toward it. The opponents of the method try to account for its success by saying that the observations of medical men everywhere go to show that the disease has existed in a mild form for the past two or three years, which is about equivalent to saying that a patient is threatened with typhoid fever. Physicians of experience know that it is one of the gravest maladies, and never threatens anyone; that in the same endemic, in the same section, and in the same family, the most severe and mild forms, frequently exist together. In these mild and so-called "walking cases" we may have grave complications, as hemorrhage and perforation. Both the etiology and pathology of this disease has been determined. The typhoid bacilli having entered the alimentary canal, find lodgement in the glands of the ileum, or are carried away in the excreta from the bowels. They have doubtless commenced their work when the physician is called, and there already exists hyperemia and congestion of the mucosa in this locality. Some time elapses before there is ulceration, erosion or necrosis. It is not the work of a day, but of many days before these changes take place. Neither are they confined to the lumen of the bowel, but through the absorbents they enter the blood, and are conveyed to the most distant parts of the system. They have been found in the liver, spleen and pancreas. It is some time, usually about the close of the second, or beginning of the third week, before a toxin is formed and nervous symptoms begin to appear, such as delirium, subsultus tendinum and picking at the bed-clothes. Now if we see the patient early, disinfect the bowel as soon as possible, and at the same time maintain free evacuation and elimination, it is not improbable that we may prevent these secondary symptoms, or that the disease may be aborted in its earlier stages. This is what some of its advocates claim, and the result seems to bear out the assertion. We have the testimony of many physicians that, under it, meteorism when present rapidly subsides; putrefactive changes are prevented, and the stools lose their peculiar odor. The most remarkable results are shown in fall of temperature, which sometimes reaches normal by the tenth or twelfth day of treatment. The patient now enters upon a favorable convalescence, asks for food, and it may be allowed much earlier than under the old régime. The bowel at any rate is the starting point of the bacilli, and if they are destroyed here, the intensity of the infection at least is modified, and the work of the phagocytes is lessened in proportion. It is more than probable that the essential oils of eucalyptol, menthol, thymol and turpentine act as intravascular disinfectants in the various organs and tissues of the body. Dr. George B. Wood introduced the latter many years ago, and it has maintained its reputation up to the present time. These remedies are absorbed before they reached the ileum, and are not supposed to act locally upon ulcerated surfaces.

The remedy which is perhaps the most important of all is the carbonate of guiacol, which has been proved to be insoluble in the stomach. After it leaves the stomach it is broken up into guiacol and carbonic acid. The former is the active principle of creosot, and the odor of the latter is detected in the various excretions. Hoelscher and Seifert of Berlin and many other German physicians regard it as an intestinal antiseptic of much value, and especially useful in typhoid fever.

Creasote has gained reputation as a germicide in phthisis and is destructive both of the typhoid bacilli and other putrefactive bacteria which are found so abundantly in typhoid stools. We do not claim that it can repair damage already done or cure ulceration already existing, but when used early, is preventative of these, and other grave complications. Neither can the carbonate of guiacol be regarded as an antipyretic, although rapid fall of temperature follows its administration. It is therefore the destruction of bacteria and consequent prevention of rapid metabolism, which, if not the cause, is always associated with the pyrexia of this disease. As the season approaches for the prevalence of this fever, physicians will have courage at any rate, to try the new method and decide for themselves its real merit or demerit.

So many new remedies have been foisted upon the profession lately, all claiming to be specifics, and when tried have proven worthless that it is difficult to call the serious attention of physicians to a new method which claims as much as this. We may undoubtedly control the high temperature of typhoid fever by the Brand method, but the disease is not subdued but only held in check and we have yet to contend with dangerous complications and sequelæ. There is some difficulty in carrying it out with hydrophobic children, and the poorer classes, among whom the disease is more prevalent. It is impossible for the physician to be present during the administration of the baths and there are required a number of intelligent assistants to carry it out properly.

There are sometimes contraindications to the use of cold baths in typhoid fever. In hemorrhage, whether active or passive, the exertion required in taking them is injurious, and the application of cold to the surface produces a greater determination of blood to the internal organs. So in hypostatic congestion of the lungs and in pneumonia; though in moderate attacks the application of cold water may be beneficial. In very great weakness of the heart's action, there would be danger from shock by the sudden immersion of the body in cold water. In country practice and among a large class of patients in our cities it is impracticable, unless, Diogenes-like we carry our tub around with us.

We allude to some of the difficulties of the Brand treatment not to influence any one against it, but to show that the new method is better adapted to patients of all classes and conditions.

26 North Mill Street.

THE RATIONAL TREATMENT OF TYPHOID FEVER.

Abstract of paper read at the meeting of the Tennessee Medical Society in Chattanooga, April 14, 15 and 16, 1896.

BY J. A. CROOK, M.D.

JACKSON, TENN.

That the curative treatment of a disease so universally prevalent in all countries, latitudes and civilizations as typhoid fever, should engage the attention of lovers of science and the promoters of health, is most

natural and laudable. A disease whose preference is so great for young manhood and womanhood when active life, with its duties and pleasures is just unfolding a disease whose grave character and fatal issues, makes its consideration and the possibility of its abortion of great importance to the profession and to humanity, is certainly worthy of the attention of this honorable body, devoted, as it is, to the amelioration of suffering and the conquest of disease.

Typhoid fever is a disease, whose nature and pathology have long been known and often described, but whose etiology, until recently, has been but little understood. This has been left for late observers, with the aid of the microscope and much experimental research, to develop and determine.

While some observers were of the opinion that every one carried in the intestinal canal, waste products from the organism, material susceptible of putrid intoxication and the development of typhoid fever under favorable circumstances, later authorities, as Koch, Eberth and others, have demonstrated the bacillus typhosus to be the germ and cause on which this disease depends, and its origin otherwise impossible; that the disease is not contagious and these germs have to be introduced into the system from without in order to produce the disease, and that this is chiefly done through drinking water; that the habitat of these germs is chiefly the lower portion of the ileum and upper portion of the colon, where they rapidly grow and multiply till sufficient irritation and toxins are produced to develop the characteristic fever.

While every form of treatment that could be devised had been tried, none, until very recently, tended to cut short the disease, and typhoid fever had come to be regarded as a self-limited disease and had to run its usual course. Flint says: "It must be admitted that the known resources of therapeutics do not afford reliable means for the arrest, nor even shortening the febrile career." Loomis, says: "After the poison has once gained entrance into the system, no means have as yet been discovered by which it can be counteracted or neutralized so as to prevent the development of the disease. The duty of the physician is to guide the disease to a favorable issue, keeping in mind that a certain definite time must elapse before this result can be accomplished." Johns Hopkins Hospital report, Vol. 10, No. 1, says: "No known drug shortens by a day the fever. No method of specific treatment or of antisepsis of the bowel has passed beyond the stage of primary laudation."

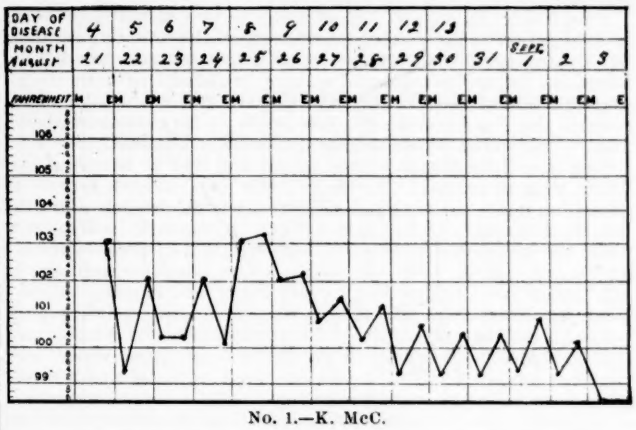
While, until very recently, this represented the true status of medical knowledge, yet, if the consensus of professional opinion be true as to its cause, namely, a specific germ whose habitat is the small intestine, any remedy that will sterilize the entire alimentary canal, destroy this germ and neutralize its toxins effectually, that is not deleterious to the system, is certainly rational and worthy of trial.

Flint again says: "It is not an unreasonable expectation that an antidote or parasiticide as effective in typhus and typhoid fever as quinia in malarial fever, may hereafter be discovered, and such a discovery is a proper aim for continued experimental observations."

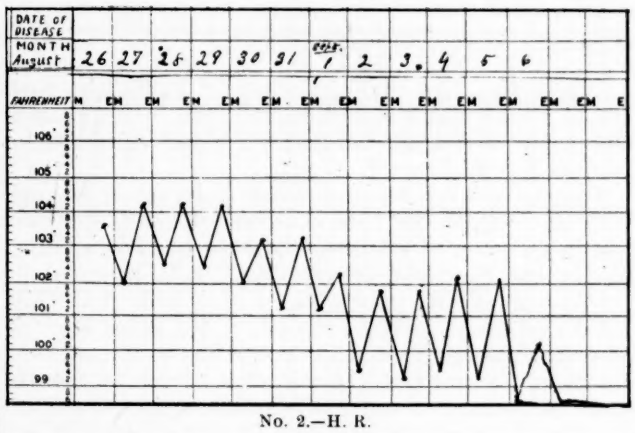
This has been the teaching of nearly all authors. On this idea carbolic acid and iodin, sulpho-carbolate of zinc, salol, salicylate of ammonia, etc., have been used as intestinal antiseptics and germicides. Notwithstanding all these remedies, with the Brand treatment, lessened the mortality and modified the course of the disease in some instances, it remained for John Eliot Woodbridge to discover and introduce to the profession the ideal intestinal antiseptic, and demonstrate with certainty, the success of his remedies, and render typhoid fever no longer one of the grave and much dreaded diseases.

I here report some of my cases:

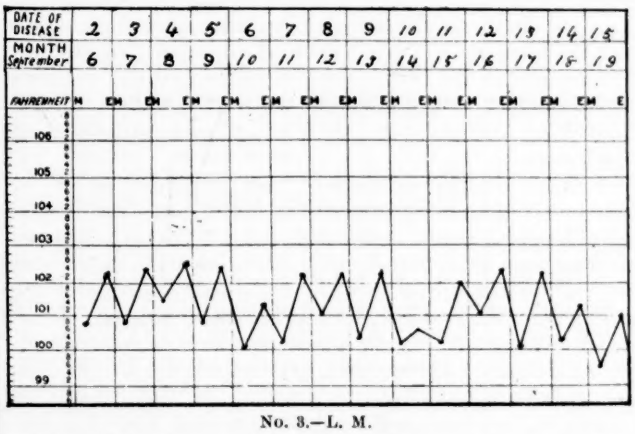
Case 1.—K. McC., male, age 17. I was called to see him on the fourth day of his sickness; temperature 103, tongue coated, and a feeling of malaise. I gave blue mass calomel and soda to move bowels, also phenacetin to reduce fever, and pressed



No. 1.—K. McC.



No. 2.—H. R.



No. 3.—L. M.

quinin. Next morning bowels had acted well; he had a free perspiration, temperature 99.4. In afternoon temperature was 102.. Morning and evening temperature next day 100.4, free perspiration. Temperature next morning 102. Afternoon temperature 100.2, when I put him on Woodbridge tablets No. 2 every hour, but kept up quinin. Temperature next morning 103, and in afternoon 103.2; added phenacetin. Temperature next morning 102, and in the afternoon 102.2, I added Woodbridge No. 3 alternated with No. 2. From this time on the fever gradually declined, the yellow thin actions kept up from

bowels for a while, the nervousness grew less, and the patient's temperature reached normal on the seventeenth day of the disease, and the tenth day after the Woodbridge treatment was commenced, and he rapidly recovered. I may add that this young man was very despondent from the start, as he had a short time before lost his cousin with the same disease.

Case 2.—H. R., age 47, married. August 26, temperature 103.6, bowels tympanitic and three or four paint-like actions a day. I put him on Woodbridge treatment every hour, gave nothing else. Next morning temperature 102. No other change. I added Woodbride No. 3 alternated with No. 2. The temperature continued as shown by the chart until the fifth day of treatment, when it reached normal. His recovery was uneventful except one of his legs swelled and remained swollen for some time during convalescence.

Case 3.—L. M., age 25. September 6, the second day after he had taken to his bed, morning temperature 100.8; put him on Woodbridge No. 2 every hour; afternoon temperature 102.2; added an occasional dose of quinin to satisfy patient; September 8 added Woodbridge No. 3, alternated with No. 2. The seventh day I noticed several rose spots on his chest and abdomen. September 20 his temperature reached normal.

Case 4.—Miss M., a young lady. October 2, temperature 105.5, tongue coated. I thought she had bilious fever. I gave blue mass, calomel and soda to move the bowels and put her on phenacetin and quinin. Next day bowels had moved well; she was perspiring freely but fever high. I pressed phenacetin and quinin. On the third day, as her fever kept up, I put her on Woodbridge No. 2 every hour, and kept up quinin. Next day no change. Next morning fever not so high and patient not so nervous. About 2 o'clock same day I found that she had had hemorrhage from the bowels three times, the chamber nearly filled with clotted blood and she was almost pulseless, temperature below normal. By the use of hypodermics of strychnia, stimulants and astringents, I was enabled to bring about reaction. As soon as I felt that she was sufficiently safe from another hemorrhage I put her on Woodbridge No. 3, alternated with No. 2 and kept it up.

When this hemorrrhage occurred I thought that she had been sick longer than reported. It appeared she had been sick for two weeks or more, but had tried to wear the feeling off.

I might add reports of a dozen cases thus treated with like results, but I deem these sufficient, with the testimony other physicians who have had like results, to establish the fact that typhoid fever can be cured.

I have used only prescriptions Nos. 2 and 3. This I did purposely, as No. 2 contained the same amount of everything as No. 1, and four times as much carbonate of guiacol and the addition of one-sixteenth grain of thymol. I am confident that the virtue of these perscriptions is increased, if not dependent on one or both of these drugs; and it seems more rational to give these at once, and get the patient earlier under the influence of these remedies. Besides it is contrary to my idea of treating a patient, to disturb him and his stomach every fifteen minutes with medicine.

I think that the success of this treatment is due to one or all of the components in No. 3, and that if this combination alone were used, with sufficient calomel and sodium tablets to keep the bowels open, the result would be the same as when Nos. 1 or 2, or both, are used, according to Dr. Woodbridge's directions.

In closing will say, that from the facts here adduced, in addition to statements published in Dr. Woodbridge's paper read at the meeting of the AMERICAN MEDICAL ASSOCIATION in Baltimore last May, the following conclusions may be drawn:

1. That the treatment given by Dr. Woodbridge for typhoid fever far surpasses in results any other treatment hitherto employed.

2. That it is entirely harmless, and it, or the antiseptics it contains, can and should be given without hesitation by any physician to any and all patients and under all circumstances when typhoid fever exists.

3. That if this treatment is begun early and persisted in, the disease will not only be materially shortened, but that all serious consequences and sequelæ, such as tympanites, glazed tongue, nervous prostration and delirium, will be prevented.

4. That if any reliability can be placed in this evidence, the Woodbridge treatment actually cures typhoid fever as certainly and surely as quinin does malaria, and that under this treatment there are but two stages of this formidable disease, first, that of rapid decline in temperature, and secondly, that of convalescence.

1796–1896.

THE MEMORIALS OF EDWARD JENNER.

Address delivered at the Centennial Celebration held at Atlanta, Ga. May, 1896.

BY HORATIO R. STORER, M.D.

HON. PRES. NEWPORT MEDICAL SOCIETY, NEWPORT, R. I.

Upon the one hundredth anniversary of Jenner's discovery, anything connected with him becomes of unusual interest. There exist a number of medals, statues, busts, paintings, engravings, lithographs and wood cuts, purporting to represent him as he appeared in life.

Medals.—It was my intention to present to the ASSOCIATION a list, with descriptions, not merely of the personal medals of Jenner, but of those illustrating the history of smallpox and the physicians who have written thereon; inoculation, and those identified with its employment; and vaccination, with those, including Drs. N. S. Davis and J. M. Toner, who have been prominent, since Jenner's day, in its development. Quite a number of them were shown by me to the ASSOCIATION at its Newport meeting in 1889. A portion of the medals relating to the subject have been given by Dr. Charles Louis Hippolyte Kluyskens[1] of Ghent, and a larger number still by Medicinal Rath Dr. L. Pfeiffer and Hof Rath C. Ruland[2] of Weimar. The first of these gentlemen has now deceased. His list of medals comprised twenty-nine, only of vaccination. To the others, Pfeiffer and Ruland, too much praise can not be given for their indefatigable labors. In their latest publication, 1882, they gave twelve medals of inoculation, and fifty-four of vaccination. That I have been able to materially add to these numbers, has been only through constant searching through several years, and a large amount of correspondence with numismatists. The list has been nearly finished, but ill health has pre-

[1] Numismatique Jennérienne. This first appeared in the Revue belge de numismatique for 1875, vol. xxxi, page 55, and was privately reprinted.

[2] Dr. Pfeiffer, who has been a prolific writer upon smallpox and vaccination, has been the collector of these medals, and Mr. Ruland, the curator of the Goethe Museum at Weimar, has been their collator. Dr. P. first published in 1876 "Die auf die Entdeckung und Ausstreitung der Impfung geschlagen Denkmünzen" (*Deutsche Zeitschrift für prakt. Med.*, Leipsic, 1876, pp. 516-524). There then appeared anonymously but evidently from the hand of Mr. Ruland, "Beschreibendes Verzeichniss Der zu Ehren William (*sic*) Jenner's und Aloysio Sacco's Sowie Auf Die Schutzpocken-Impfung und die Blattern-Inoculation Geprägten Medaillen" (*Archiv für path. Anatomie*, Berlin, 1877, LXXII, pp. 1-14). This was privately reprinted. There then came, also anonymously, "Pestilentia in Nummis. | — | Beschreibendes Verzeichniss | der auf Epidemien von Pest, gelben Fieber, Cholera, auf Pocken—Erkrankungen und Inoculationen, auf Jenner, Sacco und die Vaccination, sowie der auf Hungersnöthe und andere Calamitäten geprägten Medaillen," Weimar, 1880; and finally, with the authors' names for the first time upon the title page, "Pestilentia in Nummis. | Geschichte | der Grossen Volkskrankheiten | in Numismatischen Documenten. | Ein Beitrag zur Geschichte der Medicin und der | Cultur." Tübingen, 1882.

[Since my paper was presented at the Atlanta meeting I have received still another and very interesting article upon the subject from Dr. Pfeiffer, entitled "Zur Jenner feier | des 14 Mai 1896 | Medaillen, Porträts und Abbildungen, | betreffend | E. Jenner, die Variolation, die Vaccination | und die Vaccine." | Tübingen, 1896. While it lacks a number of the memorials I had cited, it gives several that were new to me. These I shall enter, giving due credit for each with an asterisk.]

vented its completion, and indeed the hours of the present session have been so wisely parceled in advance that there would have been scant leisure for its consideration. I shall, therefore, now offer but a catalogue of the personal medals of Jenner alone.

ENGLAND.

1. *Obverse.* Apollo presents a sailor who has been preserved by vaccination to Britannia, who holds a civic crown bearing: JENNER Legend: ALBA NAUTIS STELLA REFULSIT. 1801.

Reverse. An anchor. Above: GEORGIO TERTIO REGE. Below: SPENCER DUCE (Viscount Althorp, First Lord of the Admiralty and subsequently Earl Spencer.)

Gold.

Schlichtegroll, *Annalen der gesammten Numismatik*, I, p. 156; Rudolphi, Recentioris Aevi Numismata de Rebus Medicis et Physicis Meritorum Memoriam Servantia, Berlin, 1829 (3d edition), p. 81, No. 338; Kluyskens, Des Hommes Célèbres dans les Sciences et les Arts, et des Médailles qui Consacrent leur Souvenir, Ghent, 1859, II, p. 68, No. 1; *ibid.*, Numismatique Jennérienne, No. 1; Duisburg, C. A. Rudolphi, etc., Denuo Edidit, Emendavit et Auxit C. L. D. D., Dantzic, 1862, p. 230, DCIX, 1; Pfeiffer and Ruland, 1882, p. 139, No. 385; Baron, Life of Edward Jenner. London, 1838, II, p. 456; Storer, *Sanitarian*, March, 1889, No. 926; *ibid.*, *American Journal of Numismatics*, July, 1894, p. 14, No. 747. [Pfeiffer, 1896, p. 3, No. 385.]

Presented to Jenner by the surgeons of the British Navy. Its locality is now unknown. It is not, as Pfeiffer has supposed, a portrait medal of Jenner.

2. *Obverse.* Bust, clothed, to left. Upon truncation: [T.R.] POOLE 1809 No inscription.

Reverse. Blank.

Of pink wax upon colorless transparent glass; 82 mm. (length of bust).

Storer, *loc. cit.*, April, 1895, p. 128, No. 880. [Not given by Pfeiffer, 1896.]

In the Library of Royal Medical and Chirurgical Society of London. I know of it through Dr. F. P. Weber of that city.

A gold medal was presented to Jenner by the Medical Society of London, at its anniversary dinner, March 4, 1804. It bore either upon its rim or the casket that contained it: E. JENNER M.—D. SOCIO SUO EXIMIO OB VACCINATIONEM EXPLORATAM

Biographie Médicale, V, p. 574; Rudolphi, p. 81, No. 339; Kluyskens, II, p. 68, No. 2; *ibid.*, Num. Jenn., No. 2; Duisburg, p. 230, DCIX, 2; P. and R., p., 139, No. 386; Storer, *Sanitarian*, March, 1889, No. 927; *ibid.*, *Amer. Jour. of Num.*, July, 1894, p. 14, No. 748; Baron, *loc. cit.*

Though mentioned by all these writers, its true character has remained undecided until it was lately ascertained by Dr. F. P. Weber of London that it was the John Fothergill medal of the society (Storer, *Am. Jour. of Num.*, Oct., 1893, p. 35, and July, 1895, p. 6, No. 645). Its present locality is unknown. If the inscription were upon its casket it is possible that it is the specimen now in the British Museum, as but one or two of these medals were struck in gold. [Pfeiffer, 1896, p. 3, No. 386, describes its bust as that of Jenner. It was not so, however, but of Dr. John Fothergill.]

There exists a medallion engraving, with bust in profile to right, by J. B. Drayton, from life, and Anker Smith. Though drawn for the purpose of a gold medal it was never struck.

A centennial medal has just been issued at Bristol.

3. *Obverse.* Bust, to right. Beneath: Fenwick, Sc.F. Birm'm. Inscription: Edward Jenner, M.D. LL.D. F.R.S. &c. Born 17 May 1749. Died 26 Jan. 1823. Berkeley, Glostersh.

Reverse. Within laurel wreath: May 14th, 1896. In commemoration of the centenary of Dr. Edward Jenner's First & Successful Experiment in Vaccination May 14th, 1796.

Silver. 38 mm.

Brettauer, *Mittheilungen des Clubs der Münz-und Medaillen Freunde in Wien*, May, 1896, p. 55.

A medal in honor of Jenner has also been determined upon by the Epidemiological Society of London.

HOLLAND.

4. *Obverse.* An allegorical group.

Reverse. EDUARD JENNER, DOCTOR IN DE GENEESKUNDE | GEBOREN DEN 17 MEY 1749 TE BERKLEY IN HET GRAAF | SCHAP GLOCESTER IN ENGELAND EN ALDAAR OVERLEDEN | DEN 26 JANUARIJ 1823. UITVINDER DER KOEPOKINENTING | IN HET JAAR 1775. DOCH EERST IN 1798 DOOR HEM | BEKEND GEMAAKT.

Copper. By A. Bemme, at expense of H. Westhoff, Jr.

Dirks, Nederlandsche Penningen, 1889, I, p. 169, No. 210; Storer, *Am. Jour. of Num.*, July, 1894, p. 14, No. 749. [Not given by Pfeiffer, 1896.]

BELGIUM.

5. *Obverse.* Bust, upon an oval shield, between two females holding over it a crown. Beneath, an elongated shield, upon which a cow, to right.

Reverse. Blank.

Plaster of Paris. 37 mm. Unique. By Charles Wiener of Brussels.

Alvin, *Revue belge de numismatique*, April, 1888, p. 243; Storer, *Sanitarian*, March, 1889, p. 935; *ibid.*, *Am. Jour. of Num.*, July, 1894, p. 15, No. 757. [Not given by Pfeiffer, 1896.]

Reference to Jenner is also made upon a medal of Dr. Vrancken of Antwerp.

FRANCE.

6*. *Obverse.* Bust. Beneath: BARRE. Inscription: NAPOLEON III. EMPEREUR.

Reverse. Bust of Jenner, facing. At sides, a cloaked and a nude female figure, with laurel wreath. Beneath, a cow. Inscription: EDWARD JENNER. Upon rim: COMITÉ DE VACCINE DE LA SEINE INF. By Hamel.

Silver. 41 mm.

Pfeiffer, 1896, p. 6, No. 415c.

7. *Obverse.* Bust, facing, within palm leaves. Inscription: EDWARD JENNER. To left: HAMEL ET LECOMPTE Beneath, 1749 (the date of Jenner's birth).

Reverse. Between laurel branches: MEDAILLE DE 1RE CLASSE. Inscription: COMITÉ CENTRAL DE VACCINE DU DEPARTMENT DU NORD.

Silver. 40 mm.

Kluyskens, Num. Jenn., No. 9; Pfeiffer and Ruland, p. 145, No. 416; Storer, *Sanitarian*, March, 1889, No. 933; *ibid.*, *Am. Jour. of Num.*, July, 1894, p. 15, No. 755. [Pfeiffer, 1896, p. 7, No. 416.]

8. *Obverse.* As preceding, but bust somewhat toward left, and on pedestal, upon base of which the date.

Reverse. A laurel wreath, beneath which: MEDAILLE DE 2E CLASSE. Field vacant for name of recipient.

Silver. 36 mm.

Pfeiffer and Ruland, p. 146, No. 417, fig. of obv.; Storer, *Sanitarian*, March, 1889, No. 934; *ibid.*, *Am. Jour. of Num.*, July, 1894, p. 15, No. 756. [Pfeiffer, 1896, p. 7, No. 417.]

In the collection of Dr. Joseph Brettauer of Trieste.

9*. *Obverse.* As preceding.

Reverse. Merely the wreath.

Silver. 36 mm.

Pfeiffer, 1896, p. 7, No 417 a.

GERMANY.

10. *Obverse.* Beneath a rose bush and a cornucopia, an infant with rose in its hand points to its arm. At right of bush: L (oos) Inscription: EDUARD JENNER'S WOHLTHÆTIGE ENTDECKUNG Exergue: VOM 14 MAI | 1796

Reverse. ZUM | ANDENKEN | AN | ERHALTENEN | UND | MITGETHEILTEN | SCHUTZ | (a scroll) | GEREICHT VOM | DOCTOR (EDUARD) BREMER | IN BERLIN | 1803

Silver. 25 mm.

Rudolphi, p. 82, No. 340; Kluyskens, II, p. 68, No. 3; *ibid.*, Num. Jenn., No. 5; Duisburg, p. 230, DCIX, 3; P. and R., p. 141, No. 393; Baron, *loc. cit.*; Storer, *Sanitarian*, March, 1889, No. 928; *ibid.*, *Am. Jour. of Num.*, July, 1894, p. 14, No. 750. [Pfeiffer, 1896, p. 4. No. 393.]

In the Brettauer collection, that of the U. S. Army Medical Museum and my own.

11. *Obverse.* As preceding.

Reverse. As preceding, save that after SCHUTZ there is: — - —, and after BERLIN: 1811— | 8 L. 6 GR.

Silver. 25 mm.

Rudolphi, p. 82, No. 340; Kluyskens, Num. Jenn., No. 6; Duisburg, p. 230, DCIX, 3, note: Bremer, Die Kuhpocken, Berlin, fig.; P. and R., p. 142, No. 394; Storer, *Sanitarian*, March, 1889, No. 929; *ibid.*, *Am. Jour. of Num.*, July, 1894, p. 14, No. 751. [Pfeiffer, 1896, p. 4, No. 394.]

In the Brettauer collection and my own.

12. *Obverse.* Bust, to left. Beneath shoulder: F. LOOS Inscription: EDUARD JENNER ENTDECKER DER SCHUTZIMPFUNG D. 14 MAI 1796

Reverse. An angel from clouds, garlanding a cow, around which seven children are dancing. Legend: EHRE SEY GOTT—IN DER HÖHE Exergue: UND FREUDE | AUF ERDEN

Silver, bronze, Berlin iron. 36 mm. Thick and thin planchets.

Rudolphi, p. 82, No. 341; Kluyskens, II. p. 69, No. 4, fig.; *ibid.*, Num. Jenn., No. 7; Duisburg, p. 231, DCIX, 6; P. and R., p. 139, No. 387, fig.; Wroth, *Numismatic Chronicle*, 3d series, VI, 1886, p. 303; Storer, *Sanitarian*, March, 1889, No. 930; *ibid.*, *Am., Jour. of Num.*, July, 1894, p. 14. No. 752; Weber, English Medals by Foreign Artists, p. 50, No. 161. [Pfeiffer, 1896, p. 3, No. 387.]

In the Brettauer and U. S. Government collections, those of Prof. S. Oettinger of New York, Dr. W. S. Disbrow of Newark, N. J., and my own.

13. *Obverse.* As preceding, save that engraver's name is in exergue.

Reverse. Hygieia, with serpent upon her right arm, protects, by a shield bearing a cow, an infant against a flying demon. Legend: TRIUMPH! GETILGET IST DES SCHEUSALS LANGE WUTH

Silver, bronze, Berlin iron. 28 mm. With and without loop.

Rudolphi, p. 82, No. 342; Kluyskens, II, p. 69, No. 5; *ibid.*, Num. Jenn., No. 13; Duisburg, p. 231, DCIX, 7; P. and R., p. 140, No. 388; Wroth, *Num. Chronicle*, 3d series, VI, 1886, p. 302; Storer, *Sanitarian*, March, 1889, No. 931; *ibid.*, *Am. Jour. of Num.*, July 1894, p. 15, No. 753; Weber, *loc. cit.* [Pfeiffer, 1896, p. 3, No. 388.]

In the Brettauer and U. S. Government collections and my own.

14. *Obverse.* A child, between a rose tree and the rising sun, exhibits its arm; at its feet a serpent. Legend: DANK DER GUTIGEN VORSEHUNG. Exergue: KRÜGER.

Reverse. Within a pearled octagon: WOHL | THATIGE | ENTDECKUNG | DER | SCHUTZPOCKEN | DURCH | ED: JENNER.

Silver. 30 mm.

Kluyskens, Num. Jenn., No. 8; Duisburg, p. 231, DCIX, 8; P. and R., p. 142. No. 397; Storer, *Sanitarian*, March, 1889, No. 932; *ibid.*, *Am. Jour. of Num.* July, 1894, p. 15, No. 754. [Pfeiffer, 1896, p. 4, No. 397.]

In the Brettauer collection.

15. A centennial medal is said to have been issued at Berlin, of which the details have not yet reached me.

RUSSIA.

16. There has also been a centennial medal struck at St. Petersburg, but its description has not been received.

ITALY.

Jenner's name appears upon the two medals of Dr. Sacco of Milan.

THE UNITED STATES.

A week after the meeting at Atlanta, the following medal was issued by the Medical Society of the County of Kings (Brooklyn, N. Y.), to commemorate its own very successful Jenner celebration. It is to be regretted that, through inadvertence, the locality of the society was omitted from the medal.

17. *Obverse.* Bust, with queue, to left. Inscription: VACCINATION, MAY 14TH | 1796—1896 | .JENNER.

Reverse. Within a circle, the staff of Æsculapius, upright. Inscription: MEDICAL SOCIETY OF THE COUNTY OF KINGS | (Pointed rosette.) (This is a copy of the society's seal.)

Silver (but four struck), bronze. 38 mm.

Scientific American, May 30, 1896, p. 344, fig. of obverse. In my collection, the gift of the Society.

PAINTINGS.[3]

I. Standing, facing and slightly to the left, leaning against tree; right arm upon branch, with hat, glove and cane in dependent left hand. Milkmaid with four cows and buildings at left.

Drawn from life. J. R. Smith, 1801. [Pfeiffer, 1896, p. 18.; not B. M. J.]

II. Three-quarter's length, in coat lined with fur, to right, seated at table upon which his work, "An Inquiry, etc." showing diagram of pustules, lies open. In background, figure of Hygieia and cast entitled "Sacred Cow."

By James Northcote, R. A. (For the Medical Society of Plymouth and Plymouth Dock.) [Pfeiffer, 1882; not mentioned by him in 1896; B. M. J.]

III. Older. Facing, with left forefinger upon brow.

Northcote. This is preserved in the National Portrait Gallery at London.[4] [P., 1896; not B. M. J.]

IV. In easy chair. Bust turned to left, but looking forward, and showing portion of right hand.

Sir Thomas Lawrence, Pres't R. A. Owned by Royal College of Physicians. [P., 1896; B. M. J.]

V. Seated. Facing, and to left. At side, MS. with inkstand and pen. In background, reclining cow and buildings, at left.

J. Robinson.[5] [Not P., 1896; B. M. J.]

VI. Bust, to right; medallion.

Drawn from life by L. B. Drayton. [Not P., 1896; B. M. J.]

VII. Three-quarters length, in arm chair, with fur-collared robe. Left elbow resting on volume lettered at back: JOHN HUNTER.

Wm. Hobday. [Not P., 1896; B. M. J.]

VIII.† Aged, three-quarters length, seated, facing and slightly to left, with right arm resting on that of chair.

By Sir Thomas Lawrence. Owned by Mr. T. Malcolm Watson. [Not P., 1896.]

IX.† Artist unknown. At Royal College of Surgeons of England. [Not P., 1896.]

X.† There is said to exist an original portrait in the possession of Mr. William Smith of Chesterfield, a photograph of which is in the collection of the Royal Medico-Chirurgical Society. I have not as yet been able to identify this.

STATUES.

I. Marble statue, at west end of nave of Gloucester Cathedral, near his birth place. Erected in 1826.

By Siévier. [P., 1896; B. M. J.]

II. Bronze statue, in London. Erected in 1858 at Trafalgar Square, and thence transferred in 1862 to Kensington Gardens. In gown, face resting upon left hand, and right holding a scroll; seated in antique chair, upon whose side the staff of Æsculapius.

By W. C. Marshall. [P., 1896; B. M. J.]

III. Statue at Boulogne-sur-Mer. In standing position, left hand upon a pillar, and right flexed forward with lancet. Upon base: JENNER. Upon pedestal: A | EDUARD JENNER. | LA | FRANCE RECONNAISANTE | 11 SEPTEMBRE 1865.

By Eugène Paul. [P., 1896; not B. M. J.]

IV. Marble statuette, with rounded pedestal. Seated, and vaccinating a nude child, upon his knee.

By Giulio Monteverde. Exhibited at the Paris Exhibition of 1878. [P., 1896; B. M. J.]

BUSTS.

I. Looking to left and upward, draped, rounded and on rounded pedestal.

By C. Manning. [P., 1896; B. M. J.]

II. Looking forward and to right. Nude, squared, without pedestal.

[Not P., 1896; or B. M. J.]

III. At Brünn, Moravia. Within a temple dedicated to Jenner. Upon its pedestal: DIVO ANGLO | EDUARDO JENNER, | LXV. | AETATIS EJUS ANNO | VACCINATA BRUNENSIS | MDCCCXIV. (Baron, Life of Jenner, II, p. 214.) [Not P., 1896; B. M. J., which wrongly calls it a statue.]

IV. By Fujite Bunzo. Exhibited at the Centennial Vaccination Festival at Tokio, Japan.

ENGRAVINGS.[6]

I. From painting No. I:

a. With the milkmaid and four cows.

1. J. R. Smith, 1801. [P., 1896; B. M. J.]

2. Engraved by R. Page. No other inscription. Rectangular, 95x125 millimetres. In the J. H. Hunt collection. [Not P., 1896, or B. M. J.]

b. As preceding, but showing only a portion of hat and glove, and with but two cows and milkmaid.

3. D'Argent Sc., Edward Jenner (in script), M.D. F.R.S. Rect., 73x98 mm. At library of Surgeon-General's office. [P., 1896; not B. M. J.]

4. As preceding, but anonym. and without title. Rect., 73x98 mm. S. G. O.; N. Y. Academy of Medicine. [P., 1896; not B. M. J.]

c. As preceding, but not showing hat or glove, cows or milkmaid.

5. J. R. Smith pinxt., Londini—Dav. Weis sculps. Viennae | Dr. Jenner (in German script) | Zu finden in Wien bey Phil. Jos. Schalbacher. Oval, 98x120 mm. S. G. O.; J. H. H. [P., 1896; not B. M. J.]

d. As preceding, but less shown of left arm and waist.

6. Engraved by E. Scriven :- | JENNER | From a print engraved and coloured by J. R. Smith, in the possession of the late John Ring, Esqr. Under the superintendence of the Society for the Diffusion of Useful Knowledge. London. Published by Charles Knight, Ludgate Street. (The Gallery of Portraits; with Memoirs, London, 1836.) Rect., 100x125 mm. S. G. O.; J. H.

[3] While this paper is in press a list of Jenner memorials has appeared in the British Medical Journal for May 23. I gladly take the opportunity to add the few that had escaped me, distinguishing them by a cross, and also indicating by initials the others which were there mentioned. I also add four references to the Revue Scientifique for June.

[4] A copy of this in oil was at the Bristol (Eng'd) Industrial and Fine Arts Exhibition in 1893, examination of the catalogue of which, comprising the Mockler collection of Jenner relics, I owe to Dr. Joseph H. Hunt of Brooklyn, N. Y.

[5] A minature of the above, on ivory, possibly the original, was at the Bristol Exhibition.

[6] I am under the greatest obligations to Deputy Surgeon-General D. L. Huntington, U. S. A., Curator of the Army Medical Museum and Library, who, upon my request for information concerning several of the engravings of Jenner in his care, most generously sent to me at Newport for inspection the whole collection, over thirty in number. Dr. Joseph H. Hunt of Brooklyn, N. Y., with equal courtesy, forwarded to me for examination as many more, all different from the preceding, from his own magnificent collection. I have thus been able to perfect the list to an extent that would otherwise have been impossible.

H., and Redwood Library, Newport. [Not P. 1896, or B. M. J.]

7. J. R. Smith pinxt E. Scriven, Sct | Edward Jenner. M.D. | William Mackenzie, Glasgow, Edinburgh, London & New York. Rect., 105x130 mm. J. H. H. [Not P., 1896, or B. M. J.]

8. Mackenzie Sc. (in centre), Edward Jenner, M.D., F R S., &c. (in script). | Pub. July 1, 1802, by T. Hurst, Paternoster Row. Rect., 72x98 mm. J. H. H. [P., 1882, not 1896; not B. M. J.]

9. Mackenzie Sc. (in centre) | Edward Jenner M D., F R S., &c. | Pub. Aug. 1, 1802, by T. Hurst, Paternoster Row. Oval, 83x102 mm. J. H. H. [Not P., 1896, or B. M. J.]

10. Mackenzie Sc. (to right) Edward Jenner (in script) M.D. F.R.S. Rect., 74x100 mm. J. H. H. [Not P., 1896, or B.M.J.]

11. P. Anderloni. [P., 1896; not B. M. J.]

12. R. Page, 1823. [P. 1882, not 1896; B. M. J.]

13. Engraved by G. Stodart. | Jenner. | Published by J. Mason, 14, City Road, & 66, Paternoster Row. Rect., 70x90 mm. J. H. H. [Not P., 1896, or B. M. J.]

II. From bust alone of Painting I.

14. Smith pinxt.; Rahl Sct. Dr. Jenner (in script). Oval, 65x74 mm. S. G. O. [P., 1896; not B. M. J.]

15. H. Lips sculp. | Eduard Ienner, M.D. | Entdecker der Schutzblattern (in script, and both upon an oblong label). Oval, in rect. setting, 165x125 mm. S. G. O.; J. H. H. [P., 1896; not B. M. J.]

16. As preceding, but merely Eduard Ienner, M.D., Entdeker der Schuzblattern (in script, and both upon an oblong label). Oval, in rect. setting, 165x125 mm. (*Scientific American*, May 30, 1896.) J. H. H. [Not P., 1896, or B. M. J.]

17. Jacquemot sc. | Jenner (in script). | durch Kunst-Verlag, W. Creuzbauer in Carlsruhe. Open, 78x75 mm. S. G. O.; J. H. H. [P., 1896; not B. M. J.]

18. As preceding, J. M. Fontaine | Jenner. Open, 78x75 mm. S. G. O.; J. H. H. [P., 1896; not B. M. J.]

19. As preceding, but head more elongated. Dessiné et Gravé par Ambroise Tardieu | Eduards (*sic*) Jenner. Open, 80x80 mm. S. G. O. [P., 1896: not B. M. J.]

20. J. R. Smith pinx. J. Hopwood sculp. | Edward Jenner, M.D. | Publish'd June 4. 1803 by W. Bent, London. Oval 73x90 mm. J. H. H. [P., 1882, not 1896, or B. M. J.]

21. Edward Jenner, M.D. | Painted by J. R. Smith—Engraved by Joseph Jenkins. | Published by James Robins & Co. Ivy Lane, London, Sep. 1. 1828. Open, 80x95 mm. J. H. H. [Not P., 1896; or B. M. J.]

III. From Painting I, but reversed.

a. Bust to right, with left arm on bough, and merely hat and glove in right hand; the hat shows two-thirds; milkmaid and but two cows, at right.

22. est. von Hoppe Leipzig 1804 | Dr: Edward Jenner; | Wohlthäter der Menscheit durch Erfindung | der Schutzpocken (all in script). Oval, 120x145 mm. S. G. O. [P., 1896; not B. M. J.]

b. As preceding, but body is shorter and but small portion of hat seen.

23. Anonym. Edward Jenner, M.D. F R S &c. (in script(Engraved for the Hib. Mag. (1802.) Rect., 70x98 mm. J. H. H.; H. R. S. [Not P., 1896; or B. M. J.]

IV. From bust alone of Painting I, but reversed, to right.

24. J. R. Smith pinx. London | Edward Jenner, M.D. | Erfinder der Schutzpoken (in script) | ——*—— | Zugeeignet dem eifrigen Beförderer dieses grosen | Wohlthat | für die Menscheit, seinem Freund (in script) Dr. Eichhorn | von Christoph Wilh. Bock sen. (in script.) Oval, 72x90 mm. S. G. O. [P., 1896; not B. J. M.]

25. Anonym. Oval, 55x65 mm. (Knight, Popular History of England, VII, opposite p. 475.) J. H. H. [Not P., 1896; not B. M. J.]

26. C. Böhme sc. | Dr. Edward Jenner. Above, z. f. d. J.—No. 8 (in script). Oval, 75x93 mm. J. H. H. [P., 1896; but wrongly classed as lith.; not B. M. J.]

V. Seated upon a bank in top boots, to right and facing; left arm upon tree with its closed hand against temple, while right holds a scroll; behind, at left, two cows.

27. Bosio dis. F. Testadura inc. | Edoardo Jenner (in script). Rect., 115x168 mm. J. H. H. [Not P., 1896, or B. M. J.]

VI. From Painting II.

28. W. Say. Published January, 1803, by W. Say, No. 5 Quicksett Row, New Road, opposite Fitzroy Square, London, 270x275 mm.[7] [Not P., 1896; B. M. J.]

29. Anonym. [P., 1882, not 1896, or B. M. J.]

30. J. Northcote, Esqr., R.A.—Edw'd Finden | Edward Jenner, M.D. F.R.S., &c. &c. | Published by John Murray, Albemarle Street, 1830. Rect., 62x60 mm. (Lives of British Physicians, 1830.) S. G. O.; J. H. H; H. R. S. [Not P., 1896; B. M. J.]

[7] At the Bristol Exhibition.

VIII. From Painting III.

31. European Magazine (in script), (xcvi, 1804, p. 163.) Engraved by Ridley from an original Painting by Northcote. | Edward Jenner M.D. | Published by J. Asperna at the Bible, Crown and Constitution Cornhill 1 Oct 1804. Oval, 78x98 mm. J. H. H; N. Y. Acad. of Med.; H. R. S. [P., 1896; B. M. J.]

32. Anonym. [P., 1882; not 1896, or B. M. J.]

See also at the end of this list.

IX. From Painting IV.

33. Sir T. Lawrence, P.R.A.—W. H. Mote | Edw. Jenner (in facsimile script), M.D.-F.R.S. | Fisher, Son & Co. London & Paris. 1838 (Frontispiece to Vol. I, Baron's Life of Jenner; Pettigrew, Medical Portrait Gallery, II.) Rect., 100x112 mm. J. H. H.; N. Y. Acad. of Med. [P., 1896; B. M. J.]

X. From Painting V.

34. J. Robinson pinxit.—R. M. Meadows sculp. | Edward Jenner (in script) M.D. | Published by M. Thomas. for the Analectic Magazine. 1817. Rect., 85x110 mm. S. G. O.; J. H. H.; H. R. S. [Not P., 1896; or B. M. J.]

35. As preceding, but without the Published, etc. Rect., 85x110 mm. J. H. H. [Not P., 1896; B. M. J.]

XI. From Painting VI.

36. L. B. Drayton, ad. viv. del.—Anker Smith A.R.A., sculp. | Edwd. Jenner, M.D. L.L.D. F.R.S. &c. Circular, 47 mm. S. G. O. [P., 1882, not 1896, or B. M. J.]

37.† As preceding. Published February 1st, 1823, by J. B. Drayton, Cheltenham, Gloucestershire. [Not. P., 1896.]

XII. From Painting VII.

38. Wm. Skelton, "begun by the late William Sharp." Dedicated to the King, George IV by permission. Engraved from the Original, in the possession of Edward Davies. London: Published by R. Ackerman, 101 Strand, January 2d. 1826. 325x425 mm.[8] [Not P., 1896; B. M. J.]

XIII. Profile bust to left, seated, and with queue, arms folded.

39. Anonym. Dr. Jenner within scrolls; above at left, Ms C L (Meyer's Conversations Lexicon) No. 1730. Rect., 84x96 mm. S. G. O. [P., 1896; not B. M. J.]

40. As preceding. Dr. Jenner | Eigenthum & Verlag des Bibl. Instituts in Hilburghausen Above, walhalla—No. 38. Rect., 80x96. J. H. H. [P., 1896; not B. M. J.]

XIV. Shortened bust of preceding.

41. W. Read sc. | Dr. Jenner (in script). Open, 40x50 mm. (Profess. Anecd. or Ana of Med. Lit., London, 1825, II, p. 74.) J. H. H.; H. R. S. [Not P., 1896, or B. M. J.]

XV. Silhouette bust, to left, with queue.

42. Anonym. Dr. Jenner (in script). (Frontispiece to Vol. III, Lettsom, "Hints Designed to Promote Beneficence, Temperance and Med. Science," London, 1801 and 1816.) J. H. H.; Redwood Library. [Not P., 1896; B. M. J.]

43. As preceding. E. Jenner M.D., F.R.S., &c. (in script.) J. H. H. [Not P., 1896, or B. M. J.]

XVI. Aged bust, facing.

44. W. Read sc. | Edward Jenner, M.D. Open, 65x55 mm. S. G. O.; J. H. H. [Not P., 1896, or B. M. J.]

XVII. Bust facing, coat thrown open, shoulders truncated obliquely.

45. Anonym. Edwd. Jenner M.D. Open, 43x42 mm. J. H. H. [Not P., 1896, or B. M. J.]

XVIII. Erect, facing and slightly to left, with right arm resting upon pedestal of a pillar.

46. Anonym. Dr. Jenner. | The Discoverer of Cow Pock Inoculation (in script). Published by J. Robins & Co. Ivy Lane, Paternoster Row, March 22. 1823. Open, 100x100 mm. J. H. H.; H. R. S. [Not P., 1896; or B. M. J.]

47. Anonym. jenner. Rect., 53x40 mm. J. H. H. [Not P., 1896, or B. M. J.]

XIX. With cocked hat. (?)[9]

48†. Hicks sc. Published by Henry Fisher. Caxton. London: March 1st, 1823. [Not P., 1896.]

XX.

49†. By Branwhite. Bust. In Medley's group of the Founders of the Medical Society of London. Not originally upon the plate, but subsequently introduced. I am not as yet certain as to its exact place in this list. [Not P., 1896.]

XXI.

50†. J. Hazlitt jun. C. Turner, sculptor. London: Published October 20th, 1808, by J. Hazlitt, No. 109, Great Russell Street, Bloomsbury. I am also uncertain as to the exact classification of this. [Not P., 1896.]

XXII.

[8] At the Bristol Exhibition.

[9] That this is of Jenner is denied by Dr. Hunt, who points out that it seems identical with that of Dr. Sims of London, in Medley's group of the Founders of the Medical Society of that city.

51†. Head, on large scale. H. E. Shrapnell. I am not sure as to its allotment. [Not P., 1896.]

XXIII. From Statue II (London). Front and to right.

52. Engraved by J. Moore, from a Daguerreotype by Beard. | DR. JENNER. Rect., 95x120 mm. S. G. O.; J. H. H. [P., 1896; not B. M. J.]

XXIV. From Statue II, left side.

53. JENNER. | ENGRAVED BY J. BROWN FROM THE STATUE BY W. C. MARSHALL, R.A. Open, 130x165 mm. J. H. H. [Not P., 1896; B. M. J.]

XXV. From bust of Statue I (Gloucester). Looking to right and slightly downward; draped, squared and on mounted pedestal.

54. *Anonym. [P., 1896; not B. M. J.]

XXVI. From Bust I.

55. EDWARD JENNER, M.D. L.L.D. F.R.S. | Engraved by J. Dadley from a Bust by C. Manning [Esq.] (in script.) Open, 65x110 mm. S. G. O.; J. H. H. [P. 1896; not B. M. J.]

XXVII. From Bust IV. Japanese.

56. (Sei-i-Kwai Medical Journal, Tokio.)

XXVIII. There exists also an engraved portrait, of 1801, with this inscription in Spanish:

57. Edward Jenner, English physician, to whom the world is indebted for the discovery of vaccina, the wonderful and only preservative from the smallpox. It is prefixed to the dissertation upon cowpox published by the Royal Academy of Medicine. (Baron: Life, etc., I., p. 604.) [Not P., 1896, or B. M. J.]

In addition, there is an engraving of a cow with star above shoulder and crescent upon side. R. Reeve sc. Above; Sacred Cow. Circular. S. G. O.; J. H. H. I do not number it. It alludes to the cast represented upon Painting II, and refers to the "Sacred Cow of India," represented upon a medal of Dr. Guillaume Demanet of Ghent. [P. and R., 1882, p. 421.]

One of Northcote's paintings, II or III, is reproduced in the *Practitioner* for May, 1896.

LITHOGRAPHS.

I. From bust of painting I.

1. Th. Hosemann. [P., 1882; not 1896, or B. M. J.]

2. Anonym. Lith. de Gregorie et Deneux, à Paris. | E. JENNER. Open, 195x190 mm. (Médecins et Chirurgiens célèbres. Paris, 1842.) J. H. H. [Not P., 1896, or B. M. J.]

3. Anonym. Lith. rue Salle au—Comte, 10. | E. JENNER. Open, 200x190 mm. S. G. O. [Not P., 1896, or B. M. J.]

4. As preceding. E. JENNER. | Vigneron del.—Lith. de Engelmann. Open, 200x190 mm. S. G. O. [P., 1896; B. M. J.]

5. *As preceding. Engelmann. [P., 1896; not B. M. J.]

6. †As preceding. Lithographed by C. de Lasteyrie, 1824. (Asclepiad, VI, p. 250.) [Not P., 1896.]

7. *As preceding. Villani. [P., 1896; not B. M. J.]

8. As preceding. Steandrrij van H. J. Backer, Dordt. | Edw'd Jenner (in fac-simile script). Open, 98x100 mm. S. G. O. [P., 1896; not B. M. J.]

9. E. JENNER, M.D., F.R.S. &c. | Hart & Mapother, lith. Louisville, Ky. Open, 100x110 mm. S. G. O.; J. H. H. [Not P., 1896, or B. M. J.]

10. Anonym. DR. EDWARD JENNER. | BORN 1749. DIED 1823. | AT BERKELEY, ENG., | &c. &c. Dr. H. M. Alexander & Co., &c. Open, 40x40 mm. J. H. H. [Not P., 1896, or B. M. J.]

11. Anonym. Dr. Edw. Jenner (in script). | 1749—1823. within cartouche, over palm leaves; Dr. H. M. Alexander & Co., &c., 30x40 mm. J. H. H. [Not P., 1896, or B. M. J.]

12. Anonym. JENNER. (Dr. H. M. Alexander & Co., Columbian Exposition.) Circular. Colored, 30x30 mm. J. H. H. [Not P., 1896, or B. M. J.]

II. From bust of painting I, but reversed, to right, and with smooth instead of wavy hair.

13. Lagrand (in script)—Lith. de Ducarme. | E. JENNER, | Médecin Anglais, | 1er Observateur de la Vaccine, né en 1749, mort en 1823 (in script). Galerie Universelle—Publiée par Blaisot. | Place Vendome, No. 24, | No. 353. Open, 150x135 mm. S. G. O. [Not P., 1896, or B. M. J.]

III. From bust of painting I, but reversed, to right, with left arm dependent, and right extending a MS. volume, upon cover of which a cow.

14. Leon Noel (in script)—Lith., de Frey | EDOUARD JENNER. Open, 100x170 mm. S. G. O.; J. H. H. [P., 1896; not B. M. J.]

IV. From engraving XIII.

15. Anonym. Dr. Jenner (in script). | Published by R. Phillips, No. 71, St. Paul's Churchyard, London. Open, 42x45 mm. J. H. H. [Not P., 1896, or B. M. J.]

16. Anonym. EDWARD JENNER, M.D., LL.D., F.R.S., ETC., ETC. Open, 45x50 mm. (*Brooklyn Med. Jour.*, December, 1891.) J. H. H., H.R.S. [Not P., 1896, or B. M. J.]

17. As preceding. DR. JENNER. Open, 45x50 mm. (*Ibid.* April, 1896.) J. H. H.; H. R. S. [Not P., 1896, or B. M. J.]

18. As preceding. At sides: 1796—1896. (Jenner Centennial Festival, Med. Society of County of Kings, Brooklyn, N. Y.) Open, 45x50 mm. J. H. H.; H. R. S. [Not P., 1896, or B. M. J.]

V. From bust of Statue I (Gloucester).

19. EDWARD JENNER. M.D. | L.L.D. F.R.S., &c. &c. | Drawn from the bust by H. CORBOULD, and on stone by R. J. LANE. | Printed by C. Hullmandel. | Published March, 1827, by Henry Colburn, London. Open, 80x120 mm. (Frontispiece to Vol. II, Baron's Life.) S. G. O.: J. H. H. (P., 1896., B. M. J.]

20. As preceding. EDWARD JENNER. M.D. | L.L.D. F.R.S. &c. &c. Open, 95x140 mm. J. H. H. [Not P., 1896, or B. M. J.]

21. Anonym. (Variola and Vaccina. N. E. Vaccine Co.) J. H. H. [Not P., 1896, or B. M. J.]

VI. From Bust I.

22. M. Gauci, 1823. Published by N. Chater and Co., 33 Fleet Street, London, & Washbourn & Sons Gloucester, August 10th, 1823. 225x300 mm. J. H. H. [P., 1882; not 1896; B. M. J.]

23. MÉTHODE DE DESSIN | PAR VIGNERON.—Pl. 49. | Edwd. Jenner | Inventeur de la Vaccine. | — | d'après une Gravure Anglaise (engraving No. 55 of this list). | Paris, Mon. Basset, 33, rue de Seine. Lith. de Thierry frères, Paris. Open, 294x420 mm. S. G. O. [Not P., 1896, or B. M. J.]

VII. From Bust II.

24. Anonym. Jenner (in script). Open, 68x95 mm. S. G. O. [Not P., 1896; or B. M. J.]

WOODCUTS.

I. From bust of Painting I.

1. Anonym. Edward Jenner, born May 1749, died February, 1823. (From an illustrated paper.) Open, 100x130 mm. J. H. H. [Not P., 1896, or B. M. J.]

2. Anonym. (Russell, History and Heroes of Art of Medicine, London, 1861.) 60x65 mm. J. H. H. [Not P., 1896, or B. M. J.]

II. From bust of Painting I, but with a cow beneath.

3. LES MÉDECINS ET LES ADMINISTRATIONS RECONNAISSANTS. | MONUMENT | À | JENNER. | W. BROWN DEL. & SC. Rect., with upper corners rounded; 195x245 mm. S. G. O. [Not P., 1896; or B. M. J.]

III. From bust of Painting I, but reversed, to right, with head erect.

4. Anonym. (German.) Eduard Jenner. Open, 65x76 mm. S. G. O. [Not P., 1896, or B. M. J.]

IV. As preceding, but head inclined downward.

5. Anonym. (German.) Eduard Jenner. Rect., 74x87 mm. S. G. O. [Not P., 1896., or B. M. J.]

V. From Engraving XIII, but with large collar to coat.

6. Anonym. DR. JENNER. Rect., 100x130 mm. J. H. H. [Not P., 1896, or B. M. J.]

VI. From Statue II (London). Front and slightly to right.

7. D A—J A W (in script). STATUE OF DR. JENNER.—SCULPTURED BY W. C. MARSHALL.—PLACED IN TRAFALGAR-SQUARE. Open, 115x185 mm. J. H. H. [Not P., 1896, or B. M. J.]

VII. From Statue II, looking to right.

8. STATUE OF DR. JENNER TO BE ERECTED IN TRAFALGAR SQUARE. Open, 135x120 mm. J. H. H. [Not P., 1896, or B. M. J.]

VIII. From Statue III (Boulogne). To right and front, with vessels, groups and buildings.

9. Anonym. STATUE OF DR. EDWARD JENNER, RECENTLY ERECTED AT BOULOGNE, FRANCE. Open, 240x165 mm. J. H. H. [Not P., 1896; or B. M. J.]

IX. From Statuette IV.

10. Anonym. EDWARD JENNER. (*Leipziger Illustrirte Zeitung*, 1885.) Open, 115x185 mm. S. G. O. [P., 1896; not B. M. J.]

11. As preceding. From the original by Monteverde. Open, 115x185 mm. J. H. H. [Not P., 1896, or B. M. J.]

12. †As preceding. Ferrier. Jenner vaccinating his own child. From the statue by Monteverde. (*British Medical Journal*, May 23, 1896, p. 1254.) Open, 70x106 mm. [Not P., 1896.]

PHOTOGRAVURES.

From Painting I.

1. †Anonym. From an engraving by J. R. Smith. (*British Medical Journal*, May 23, 1896, p. 1251; *Revue Scientifique*, June, 1896, p. 741.) Rect., 84x110 mm. [Not P., 1896.]

From Painting II.

2. †Anonym. From a painting by Northcote now in the National Portrait Gallery. (*British Medical Journal*, May 23, 1896, p. 1247; *Revue Scientifique*, June, 1896, p. 739.) Rect. 127x152 mm. [Not P., 1896.]

From Painting IV.

3. †Anonym. From the painting by Sir Thomas Lawrence in the possession of the Royal College of Physicians. (*British*

Medical Journal, May 23, 1896, p. 1246; *Revue Scientifique*, June, 1896, p. 738.) Rect., 82x100 mm. [Not P., 1896.]

4. As preceding. Edw. Jenner (autograph) M.D. F.R.S. Souvenir Jenner Centennial Celebration by AMERICAN MEDICAL ASSOCIATION, Atlanta, Ga., 1896. Rect., 94x115 mm. [Not P., 1896, or B. M. J.]

5. As preceding. Edward Jenner. (JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, June 13, 1896.) Rect., 94x115 mm. [Not P., 1896, or B. M. J.]

From Painting VIII.

6. †Anonym. (*British Medical Journal*, May 23, 1896, p. 1249; *Revue Scientifique*, June, 1896, p. 743.) Rect., 125x152 mm. [Not P., 1896.]

From Engraving 53, of Statue II, left side.

7. †Anonym. Statue in Kensington Gardens by Mr. W. Calder Marshall, R. A. (*British Medical Journal*, May 23, 1896, p. 1248.) Rect., 127x153 mm. [Not P., 1896.]

From Lithograph 4.

8. †Anonym. From a portrait by Vigneron. (*Ibid*, p. 1252; *Revue Scientifique*, June, 1896, p. 738.) Rect., 82x100 mm. [Not P., 1896.]

There are a number of caricatures of Jenner, and engravings of vaccination, vaccine farms, etc., but I have purposely omitted these.

During Jenner's life, as an offset to the innumerable insults and scurrilous attacks that he received, the Royal Jennerian Society was founded in 1803. In 1808, at his own request, it was merged in the National Vaccine Establishment. He was given a Parliamentary grant of £10,000 in 1802, another of £20,000 in 1807, and subsequently an additional £8,000 by India. He was also presented a service of plate by his country friends, and the freedom of the city of London, in a casket set with diamonds. There is a memorial window and tablet of him at the church in his native Berkeley.[10]

THE SEMINARY METHOD IN TEACHING SURGERY.

Read before the American Academy of Medicine, Atlanta, May 4, 1896.

BY BAYARD HOLMES, B.S., M.D.

PROFESSOR OF SURGERY IN THE COLLEGE OF PHYSICIANS AND SURGEONS OF CHICAGO.

I can best give an idea of this method by relating the history of an experiment which I made in teaching a few topics in surgery to a class of thirty students. A case of osteomyelitis of the tibia came to my clinic and was carefully studied by me with the help of the class. The history was outlined upon the blackboard, and the diagnosis, prognosis and indication for treatment were carefully discussed and our conclusions written down. When this had been done the students were instructed to bring into the class at the next recitation hour histories of three or more cases of osteomyelitis, which they had themselves observed or had copied from articles in the medical literature. The class had previously been instructed in the method of using the medical library, and cards had been placed in the card catalogue of the college library guiding the students to as many articles as the library contained bearing upon the subject of acute osteomyelitis. During the next clinic hour this patient was operated upon in the presence of the class, and a large sequestrum of bone removed. The involucre was so cut down so as to allow the resulting concave surfaces to be covered with skin. At the next recitation hour the students came with some original and some copied histories of cases of osteomyelitis. One student with a good voice and prompt address was requested to read one of his cases aloud. This case had been selected by me because it was typical and well recorded. As the reading progressed notes were placed upon the blackboard indicating the age of the patient, the predisposing causes of the disease, the immediate cause of the onset of the disease, the most prominent symptoms and the subsequent course and the treatment.

Opposite the age of this typical case was set down the age of the sixty-four other patients, whose histories were in the hands of the students in the class. In this way we discovered that nearly all the patients were between six and twenty-five years of age, one student was requested to make a statement, which would show the condition represented by the mass of figures. After a number of trials he wrote out the following sentence, which was accepted as expressing the facts: "Of the sixty-four cases presented by the class, 52 per cent. were between 5 and 20 years of age, 20 per cent. were between 20 and 30 years of age, and all of the remaining 28 per cent. were less than 46 years of age." In the same manner the previous condition of the patient and the predisposing causes of the disease were noted down upon the blackboard and afterward expressed in short sentences, thus: "Thirty per cent. of the sixty-five cases presented had suffered from some acute infectious disease immediately before the onset of osteomyelitis." In the same manner the other important points in the clinical history, in the pathology and in the treatment of the disease, was discussed. It required several hours for this work, and the intervening time was spent by the students in collecting new information and in exchanging histories of cases with one another. After every important point had been studied, the students were directed to make an abstract of the histories of ten or more cases, and then from these cases to prepare a generic history of the disease. Instructions had been given as to the size of the sheets of paper, the disposition of the manuscript on the page and the method of arranging and binding. Two weeks were then allowed for the completion of the thesis upon this disease. Thirty very excellent and satisfactory papers were written. One would naturally expect a great deal of sameness in these efforts, but contrary to my own expectation there was the greatest variety of treatment. One student of a judicial turn of mind numbered very carefully his cases and the pages of his manuscript, and then in the original portion of his thesis referred after each statement to the cases which authorized it. One man divided his histories up into fragments and quoted the fragments in full corroboration of each fact or conclusion stated. A few men copied outright from text books on surgery, but on the whole this was a most satisfactory exercise.

Various other subjects were studied in the same manner, all the class working upon the same subject at the same time. When familiarity with the method of work had thus been secured, separate topics were given each student, and he was directed to investigate the literature of the subject as represented in the college library, and then to prepare in the usual manner a complete account of the disease, its pathology and treatment, basing his remarks entirely upon the histories of the cases, which he had either observed himself in the clinics or on those he had abstracted from the literature, but best of all upon both. Care was of course taken to assign only such subjects as were adequately represented in the college library, and also so as to give each student one surgical disease of the head, one of the thorax, one of the abdo-

[10] They are figured in the British Medical Journal for May 23, 1896, p. 1253.

men, and one of the extremities. At first the work was reluctantly undertaken by the students, but after an examination at the County Hospital had been held in which, by chance, questions were asked involving a knowledge of two of the subjects which had been studied by this method, the value of this intensive teaching was recognized, and enthusiastically undertaken by nearly all the class ever afterward.

This method of study must be conducted in small classes of mature students, who understand the use of and have an adequate library at hand. It requires about six or eight hours preparation for each recitation hour, and it must be conducted by a teacher who fully understands the resources of the students and is wise enough to present at the start no insurmountable difficulties. Perhaps the ideal can only be attained when the teacher has previously studied each of the subjects he assigns in the library of the college and has taken care to have such cards put in the catalogue as will guide the student to all the literature without too much effort.

One of my students had assigned him a topic involving the repair of fractures in long bones. He took the trouble to study the specimens in the museum, and he also made a series of experiments on animals in which he made microscopic demonstrations and prepared large macroscopic sections sawed out near the seat of fracture. In the seminary method nothing should be neglected which will add to the concreteness and vividness of the conception of the student. He should be placed as far as possible in the position of an original investigator, with many of the difficulties which ordinarily beset the investigator removed.

This method is equally applicable to the study of any topic in the medical curriculum, but it should not be used to the exclusion of any other method, but rather as supplementary to any or all of them. It is especially adapted to students who have been trained in independent thought in colleges and universities, and it will be found an excellent preparation for such students as propose to contribute to medical literature.

MALARIA.

BY ELLSWORTH D. WHITING, A.B.
AURORA, ILL.

(The L. P. C. Freer Prize Essay, Rush Medical College, 1896.)

(Concluded from page 269.)

The increase of connective tissue is first observed in the interlobular spaces, and later dips down into the lobules. The atrophy of liver cells follows this increase of interstitial connective tissue. (Plate vi.)

On gross examination the kidney is found to be larger and heavier than normal. In consistency it is either firm or soft and edematous, presenting a mottled surface, the result of infarction. The capsule strips readily or is thickened and adherent as in severe cases. The Malpighian bodies are either prominent and swollen or sunken and atrophied. These conditions are often present in the same specimen. On cut section the color of the kidney varies from the normal to a yellowish brown, marked by opaque, dark and minute hemorrhagic areas. The medullary rays are pale, showing between them dark, red lines of congested intertubular vessels. The cortex is generally thick and paler than normal. It is translucent and of yellowish appearance. (Plate iv.)

On microscopic examination the glomeruli may fill their capsules, but they are often atrophied, the space between the glomerulus and Bowman's capsule being empty or filled with albumin, red corpuscles, disquamated epithelial cells or leucocytes. In some instances there seems to be a proliferation of the cells lining the capsule. Outside the capsule, at times, a space may be made out, filled with leucocytes and red corpuscles. Within the capillaries of the glomeruli are numerous leucocytes, parasites and microorganisms, which may completely fill up the lumen of the vessels. The leucocytes contain granular pigment and parasites. Parasites are also present in large numbers outside of the leucocytes. In the glomeruli macrophages are generally few.

Turning to the convoluted tubules, these appear dilated, the epithelial cells of which are swollen and show evidence of degeneration. Fringing these epithelial cells are small hyalin droplets. The tubules are often plugged with granular and hyalin casts, within the substance of which are blood corpuscles, degenerated epithelial cells, pigmented granules and yellowish urinary sediments or excretions. The intertubular capillaries are also dilated and crowded with the foreign materials found in the glomeruli. (Plates iii and v.)

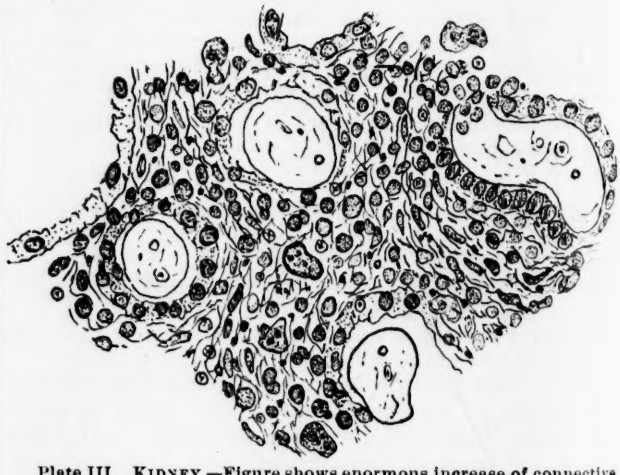


Plate III. KIDNEY.—Figure shows enormous increase of connective tissue which is infiltrated with round cells, macrophages, parasites and pigment granules. Tubules are filled with hyalin casts in which are seen pigment granules and leucocytes. Zeiss Obj. D D, Oc. 5. Draw tube 160 mm.

The changes in the interstitial tissue are usually slight. Here and there may be seen areas of round-cell infiltration, consisting of lymphocytes and large mononuclear leucocytes. In severe cases these changes may be great. (Plate iii.)

As a result of thrombosis extensive infarcts are present, embracing glomeruli, tubules, blood vessels and interstitial tissue. These infarcts are surrounded by a strongly marked margin of deeply staining round cells. It is in these thrombosed vessels, at the apices and margins of the infarcts, that the greatest number of parasites are found.

Fatty degeneration is present in the glomeruli, the lining membrane of Bowman's capsule and muscular coats of the arteries.

The heart on gross examination is practically normal in size and weight. The only constant pathologic change present is a brown pigmentation of the myocardium and a slight thickening of the endocardium. Calculus degeneration is commonly present in the valves, associated with atheromatous degeneration of great and coronary vessels.

On microscopic examination the only pathologic

picture to be seen is in the muscular fibers of the myocardium, where, at the poles of the nuclei of the muscle cells an excess of brown pigment may be observed.

Pathologic changes are common in the bone marrow. Macrophagi are present in great numbers and show contents similar to those found in the spleen and liver. Red corpuscles both nucleated and degenerated may be seen in increased numbers, also leucocytes whose nuclei are fragmented and filled with pigment. The endothelial cells are also degenerate and filled with pigment.

On gross examination the lungs are either normal or emphysematous and non-collapsing. When non-emphysematous they are much darker than normal. On cut section edema of dependent parts is observed. Large and small bronchi are filled with a muco-purulent secretion, showing general bronchitis. In a great number of autopsies no lung lesions are present with the exception of a slight general bronchitis.

Plate IV. KIDNEY.—Figure shows atrophy of glomerulus, increase of interstitial tissue, infiltration with round cells, parasites and pigment granules. Epithelium of uriniferous tubules is swollen and granular. Zeiss Obj. D D, Oc. 5. Tube length 160 mm.

On microscopic examination the pleural and pulmonary veins are seen to be dilated. Here malarial organisms are present in great numbers, either enclosed in the red corpuscles, free in the plasma or in the leucocytes. Collections of pigment granules and phagocytes may exist in sufficient quantities to plug up the lumen of the vessels.

Pathologic changes in the brain are not numerous, but those present are of great importance from a clinical standpoint

On gross examination an increase in the spinal fluid is observed. The dura is thickened and small pigmented and hemorrhagic areas can be made out, associated with turgescence of blood vessels.

On microscopic examination infected corpuscles and organisms are present in the phagocytes and endothelium lining the capillaries. In the cerebral tissue white infarcts with hemorrhagic margins are quite numerous.

In the supra-renal bodies many pathologic lesions are present which correspond closely with those described as associated with the kidney, liver and spleen.

Oligocythemia is always present in malarial fevers. It is caused by the direct destruction of the red corpuscles by the organisms and is in inverse ratio to the number of parasites present in the blood. A marked reduction of red corpuscles is noted after the paroxysm, from which point there is a gradual increase which continues to the beginning of the next paroxysm. In the mild tertian and quartan types during the apyretic stage complete restitution of corpuscles may be accomplished but in the severer form there may be an actual decrease during this period. It is quite a noticeable fact that restitution of red corpuscles takes place to a greater degree during the earlier days of the disease than in the later stages. As the disease lengthens in duration the decrease in red corpuscles may reach as low as one million corpuscles to the cubic millimeter. After protracted sieges of malaria the changes brought about in red corpuscles, are marked. In the blood stream may be found poikilocytes, degenerated and vacuolated red corpuscles, microcytes, macrocytes, normoblasts and megaloblasts. (Plate xvi.)

In regard to the leucocytes, their number follows

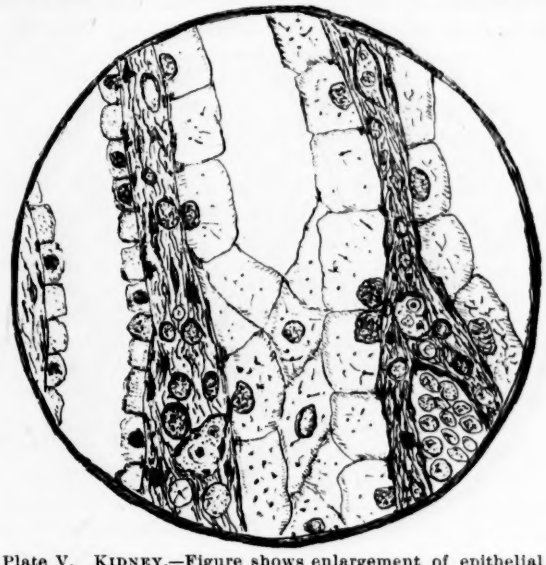


Plate V. KIDNEY.—Figure shows enlargement of epithelial cells lining tubules and increase of interstitial tissue, which is infiltrated with round cells, macrophages and pigment granules. Zeiss Obj. 1-12 oil, Oc. 3. Tube length 160 mm.

closely the changes noticed in the red corpuscles. Directly after the paroxysm there exists a marked leucocytolysis. At times the number may reach as low as one thousand per cubic millimeter. From this point an increase is observed until during the first hour of the paroxysm, when the count may be normal or an actual leucocytosis exist. The degree of leucocytolysis seems to depend greatly upon the size of the spleen. The greater the size of the spleen the greater is the leucocytolysis, a condition directly opposite to that found in splenic leukemia.

The recuperative power of the leucocyte is much less than that of the red corpuscle. In postmalarial conditions the red corpuscle generally gains its normal state long before the white, but in some cases of pernicious malaria a marked leucocytosis exists.

In regard to oligochromemia, its presence in malaria, as would be naturally expected, is marked and is generally in direct ratio to the oligocythemia. In some cases the lack of hemoglobin is greater than can be accounted for by the oligocythemia. No acute infection known has such a depleting action upon the

hemoglobin of the blood as malaria. Depending upon the severity of the underlying cause this condition may be brought about in a few days or be the result of a long infection. (Plate xvi.)

As in oligocythemia and leucocytolysis, oligochromemia increases after the paroxysm and diminishes gradually until the beginning of the following paroxysm. The rapidity and severity of the loss of hemoglobin affords a valuable diagnostic aid in differentiating malaria from pneumonia, typhoid fever and enteric fever.

The relative number of phagocytes present in the blood crresponds closely to that of the leucocytes. The ability of the leucocyte to cope with the parasite seems to increase with the age of the leucocyte. The small mononuclear leucocyte or lymphocyte which is supposed to be the first stage in the development of the adult form, possesses little or no phagocytic power. The large mononuclear has some phagocytic function, but is unable to cope with flagellate forms of the organism. The eosinophile has never shown any indications of phagocytic power. The greater portions of the work done by phagocytes is therefore accomplished by the large polynuclear leucocytes and macrophages aided by the cells lining the blood

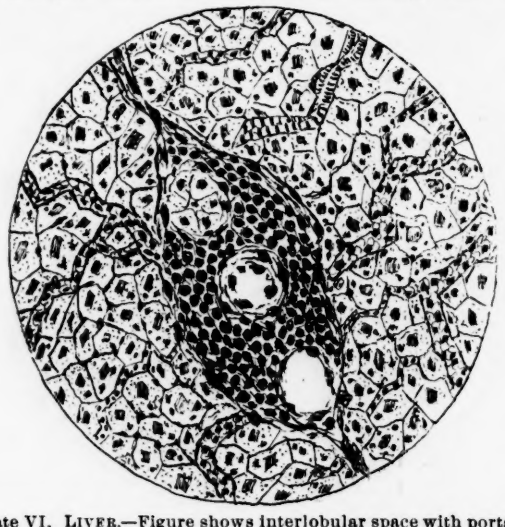


Plate VI. LIVER.—Figure shows interlobular space with portal vein, hepatic artery and bile duct and greatly increased connective tissue. Pigment granules are seen in and between hepatic cells. Capillaries are distended with many leucocytes. Connective tissue is infiltrated with round cells. Zeiss Obj. D D, Oc. 3. Tube length 160 mm.

vessels and endothelial cells of the liver and spleen.

As to the effect of the phagocytes upon the course of the disease there are two theories. The first, upheld by Golgi, Bignami and others, goes to prove that the spontaneous cure of malaria and the prevention of the mild forms from becoming pernicious is due to the action of the phagocytes in removing from the body spores, adult organisms and degenerated corpuscles. These men account for relapses by stating that when spores are contained in white corpuscles a struggle takes place between the two bodies, in which the phagocyte is finally worsted. On the other hand, Osler and others claim that phagocytes do not play the most important part in cutting short the course of malaria. To prove this statement these observers call attention to the fact, that in severe paroxysms phagocytosis is most apparent, and that in cases of spontaneous recovery there is no evidence of increased phagocytosis, but rather an increase in the number of degenerated organisms. They also call attention to the rhythmic course which untreated malarial fevers pursue. The paroxysms gradually increase in severity, a period of fluctuation, then spontaneous recovery followed in two or three weeks by a relapse. If the checking of the course of the disease depended upon the action of the phagocytes, the fever would be allayed in the first part of its course, for phagocytes are as numerous in this part of the course as in the later stages.

The theory of these latter investigators is that malaria is self-limiting and that at each period of segmentation a toxic substance is thrown into the blood stream, which becoming more and more virulent at each succeeding paroxysm, eventually becomes sufficiently potent to cause the death of the organisms, only a few spores protected by degenerate phagocytes surviving to be the source of a relapse.

Mannaberg claims that the temperature caused by the body in reacting against the toxic irritants in the blood, exerts also a deleterious influence upon the half and full grown organisms.

Thus in summing up causes which may bring about spontaneous cures we must take into consideration these three factors, phagocytosis, toxic excretions of the parasite and the temperature.

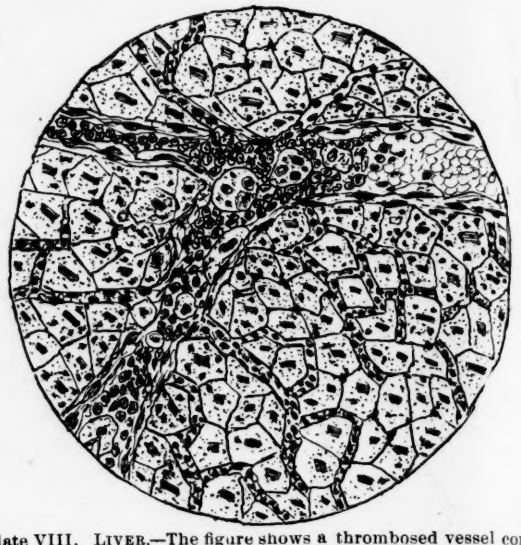


Plate VIII. LIVER.—The figure shows a thrombosed vessel containing red blood corpuscles, small round cells, macrophages, parasites and pigment granules. Pigment granules also in capillaries and in and between hepatic cells. Capillaries are dilated and contain many leucocytes. Zeiss Obj. D D, Oc. 3. Tube length 160 mm.

In consideration of malaria from a clinical standpoint, it may be divided into the following forms: 1, intermittent; 2, pernicious intermittent; 3, remittent; 4, pernicious remittent; 5, typho-malaria; 6, malarial cachexia and irregular forms. The clinical manifestations of malaria may also be classified in reference to the length of time between paroxysms: 1. Quotidian, produced by the segmentation of two groups of tertian organisms on successive days. 2. Tertian, produced by a single group of the tertian organisms. 3. Quartan, single, double and triple, produced by the quartan parasite. 4. Irregular or continuous, produced generally by estivo-autumnal parasites. The first classification, as proposed by Thompson, is much more complete and will be followed here.

Intermittent fever is caused generally by the tertian or quartan parasite, rarely by the estivo-autumnal. It is characterized by complete disappearance of symptoms between paroxysms. Its course may be divided into three distinct stages: 1, the cold stage; 2, the hot stage; 3, the sweating stage.

The first stage may appear suddenly or come on gradually. It is preceded by a headache and general malaise and is characterized by a subjective sensation of cold while the thermometer records a rise of internal temperature. The face is pale and pinched, the skin cold, clammy and of the goose quill appearance. The pulse is weak and rapid and respiration shallow. The patient complains of cold which abundant covers will not relieve, muscular pains and headache. Associated with the chill are often severe rigors in which the patient shakes violently from head to foot. The teeth chatter wildly and coherent speech is impossible. The superficial, sub-normal temperature is caused by the constriction of the peripheral vessels, resulting in great internal congestion. This fact explains the enteric, liver and splenic symptoms, evinced by frequent nausea and vomiting and tenderness. The paroxysm may be of varying duration. In some instances it may last for but a few moments, associated with simply a chilly sensation, or feeling of weakness, or it may last from two to four hours, accompanied with great rigors and intense pain. In children the chill may be replaced by a convulsion. There seems to be no relation between the severity of the chill and the following hot stage.

The second stage is characterized by a gradual rise in temperature which may reach as high as 106 F. The face is flushed; the skin of the mouth, throat and nasal passages hot and dry; the pulse full, rapid and strong and frequently dicrotic. The respiration is deeper; the headache and vomiting may continue, but disappear with the fever. When the fever runs exceedingly high the patient may sink into a comatose or delirious state.

The third or sweating stage follows the fall in temperature and is ushered in with a profuse perspiration. This commences upon the face and forehead, but soon the whole body is bathed in sweat, which often soaks the bed clothes. During this stage the patient experiences great relief. The headache, muscular pain, vomiting, tender abdomen and splenic tumor disappear. This is due in great part to the relaxation of the peripheral blood vessels, which relieves the internal congestion. After the perspiration has ceased the patient is greatly prostrated and may remain in this condition for many hours. This stage lasts from two to five hours and may continue from three to ten or twelve hours. During apyrexia the temperature is generally sub-normal.

The urine during and after the chill is increased in solids, although there is a relative decrease in the amount of urea excreted. Slight albuminuria and glycosuria have been noticed during paroxysms.

Intermittent fever at times assumes a grave and malignant aspect. It may be ushered by an ordinary paroxysm followed by a severe one which in turn is succeeded by a third and fatal one.

The following classification of intermittent pernicious fevers, based upon the most prominent symptoms, is given in the American Text Book of the Theory and Practice of Medicine: 1, bilious; 2, hemorrhagic; 3, algid; 4, asthenic; 5, comatose.

In the bilious form severe abdominal symptoms are present. There is generally flatulency and tenderness of the abdomen, associated with the vomiting of large quantities of bile, and watery discharges from the bowels. The liver and splenic areas of dullness are much increased. Jaundice may occur within a few hours after the paroxysm.

The hemorrhagic form is always grave. During the hot stage blood appears in the urine, which is decreased in quantity and contains albumin and casts. Soon there appear hemorrhages from the mouth, stomach, rectum and skin. Suppression of urine soon follows, with violent headache, delirium, coma, Cheyne-Stokes respiration, heart failure and pulmonary edema and death from uremic and malarial poisoning.

The algid form simulates closely the algid stage of cholera. Great prostration is present, associated with purging, vomiting, muscular pains, superficial subnormal temperature and at times jaundice.

The asthenic form is accompanied by great nervousness, imperfect aeration and feeble heart.

In the comatose form the patient may immediately enter into the comatose state from which he can not be aroused. If this first attack be survived the second is certain to prove fatal. This form may be present in any of the preceding types, but it is rare.

The same stages characterize the remittent forms of malaria as the intermittent, with the exception that the temperature rarely falls below 100 degrees F. This form of the disease is associated especially with the second cycle of the estivo-autumnal organism. Remittent fevers may commence as intermittent or they may immediately assume this form after a severe initial paroxysm. The second stage is often prolonged, lasting from twelve to twenty-four hours. The third stage is not so prominent as in the intermittent. During the interval between paroxysms the patient is not as free from symptoms, complaining of fever, nausea, vomiting and muscular pains. The remission generally occurs during the night. The fever may subside gradually, retaining its remitting character or first become intermittent before disappearing.

Penicious remittent fever is so nearly identical in symptomatology with pernicious intermittent fever that a separate description is not necessary.

Typho-malarial fever consists in a combination of the symptoms of malaria and typhoid fever. It begins with a chill followed by fever. The symptoms of this disorder may be most markedly those of either of these diseases; however, the typhoid symptoms are generally most prominent, the malaria being in evidence only by the variations in temperature. Typhoid fever, when associated with malaria is not as fatal as when existing alone.

Malarial cachexia is seen in persons who have had many attacks of malaria or in those who have lived for long periods in malarial districts. It is associated with a pale, muddy complexion. Anemia and indigestion are common. Circulation is poor and anasarca may be present. There is lassitude and mental depression. The temperature may be subnormal or slightly elevated. There is generally an enlargement of both liver and spleen.

Under the head of irregular forms are found many disorders of malarial origin which may escape the diagnostician. It is in these that the blood examination is of the greatest importance. In some instances the chill may be entirely absent. This is termed "dumb ague." In other cases the sweating stage is not present, and again both the foregoing may be absent. The entire paroxysm may be wanting, in the place of which malaise is noticed, headache, diarrhea or vomiting, with perhaps a very slight rise in temperature. Such patients are termed by the laity "bil-

ious." Again the malarial paroxysm may appear in the form of severe neuralgic pain associated with the fifth, sciatic, brachial or intercostal nerves.

The diagnosis of pure types of intermittent fever is readily accomplished without a blood examination, based upon the peculiar quotidian, tertian or quartan paroxysms and splenic tumor. These forms simulate closely, however, the onset of pneumonia which is later easily differentiated. Suppurative infection should be excluded by careful examination for infection atrium and hidden foci. In these diseases the chills and fever are irregular and no splenic tumor exists. When suppurative processes are present with phthisis it is necessary to examine the sputum. Even in cases where the symptoms are pathognomonic, corroborative blood examinations should be made, if possible, in order to establish the type of organism present.

On the other hand, when it is necessary to contend with remittent and pernicious forms the diagnosis is at times very difficult from a clinical standpoint. These forms may be confused with typhoid fever, cholera, ulcerative endocarditis, pyemia, septicemia and meningitis. It is in these cases that the microscope is of invaluable aid to the physician and in many cases is the only means of arriving at an accurate diagnosis.

When rose-spots are absent in typhoid fever, a condition which often exists, it may be simulated very closely by the typho-malarial form of malaria. In yellow fever the characteristic symptoms, peculiar onset, black vomit, jaundice and suppression of urine, are all simulated by pernicious malaria. The diagnosis of the algid stage of yellow fever from the algid form of malaria is impossible without a blood examination. Ulcerative endocarditis can usually be differentiated from malaria by a physical examination of the heart, and pyemia by establishment of infection atrium. In differentiating uremia and meningitis from comatose pernicious malaria it should be remembered that coma comes on later in meningitis than in malaria, and that it is accompanied with

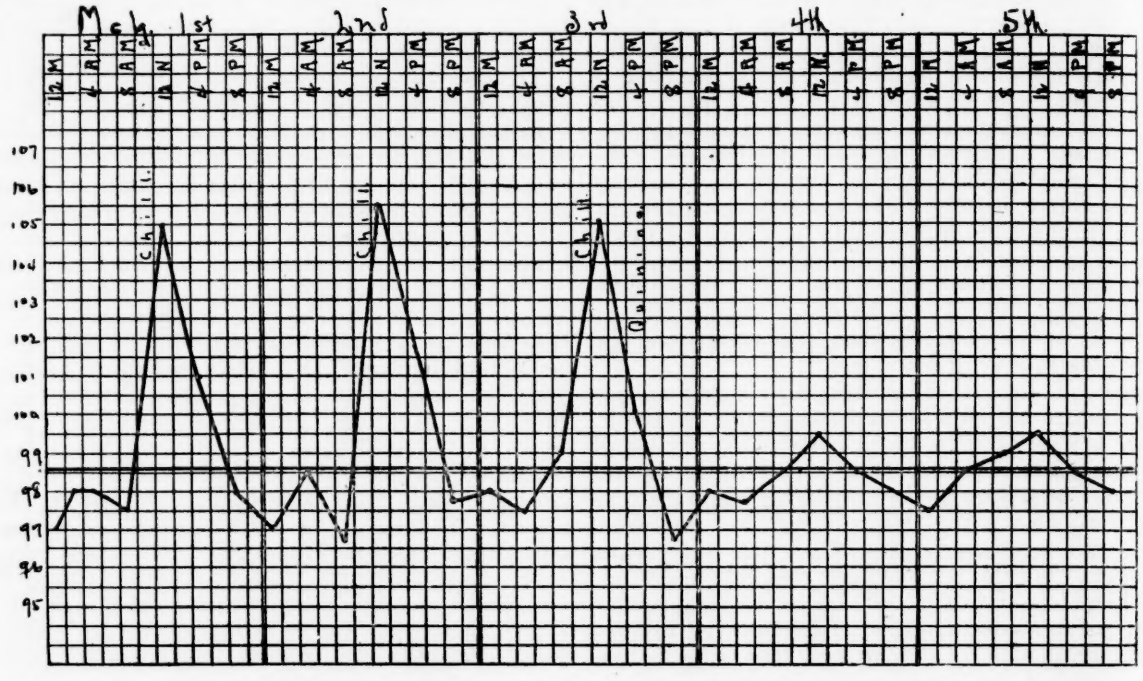


Plate XIII. INTERMITTENT QUOTIDIAN OR DOUBLE TERTIAN FEVER. TEMPERATURE CHART.

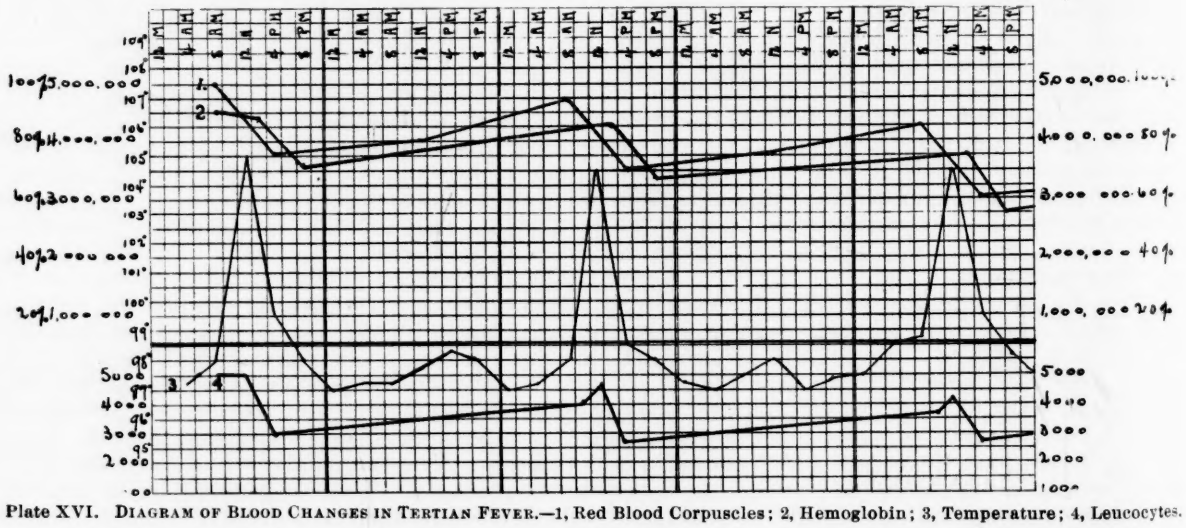


Plate XVI. DIAGRAM OF BLOOD CHANGES IN TERTIAN FEVER.—1, Red Blood Corpuscles; 2, Hemoglobin; 3, Temperature; 4, Leucocytes.

photophobia and lowered temperature. Pernicious malaria often merges into uremia and can be differentiated only by the microscope. It is in the differential diagnosis of malaria from the foregoing diseases that the discovery of the organism of malaria has worked its greatest benefit to the medical profession. This is especially true in the case of typhoid fever; and it is probably a fact that to-day many malarial patients are being treated for typhoid fever.

The prognosis of the milder forms of malaria is always good. In the pernicious types it is grave, the degree of mortality depending upon the vitality of the patient, the promptness of treatment and accuracy of diagnosis.

Prophylactic treatment is very efficient. Taken in connection with hygienic observations and pure water, quinin will in most instances establish immunity for a considerable length of time. Following this treatment travelers have invaded the most deadly malarial regions without serious results.

As to the treatment of malaria, quinin is the great panacea. Probably 95 per cent. of all cases succumb to its effects.

Most observers agree that quinin causes the death of the organism by direct contact when the parasite is in the sporulating form outside the corpuscle. This drug, when given two hours before the paroxysm, even in fifteen grain doses, will not stop the oncoming paroxysm but will prevent the spores from entering new corpuscles. This fact seems to prove that the adult segmenting organism is not affected by the drug while the free and growing spores constantly imbibing nourishment from the plasma of the blood are readily destroyed. When the spores have gained entrance into the corpuscles they are equally invulnerable as the adult organism. This goes to prove that the hyalin body lives to a great extent upon the protoplasm of the corpuscle.

As to the administration of quinin, two principal methods are in practice at the present time. The first consists in giving moderately large doses every four hours until the paroxysms are overcome and then gradually decreasing the size of the dose. The second method is to give small doses during apyrexia with very large doses from three to five hours before the anticipated paroxysms. As many as thirty grains may be given at one time. Good results follow both these methods.

In some instances quinin can not be given on account of individual idiosyncracies. But a few days ago the writer saw a young girl the skin of whose hands had completely peeled away as the results of taking a few grains of quinin. In other cases this drug in the minutest doses may produce distressing symptoms of cinchonism associated with nervousness and vomiting. In such cases the other alkaloids of cinchona must be tried. Marburg's tincture is often effective, and bone marrow and methylene blue have been used with a moderate degree of success. Arsenic is a powerful antiperiodic but is slower than quinin. During the paroxysm palative treatment should be used, as hot drinks and cloths during the chill and sponging during the fever if the temperature rise exceptionally high.

In pernicious cases quinin should be given hypodermically and with great promptness and the patient kept warm and quiet. The great object should be to tide the patient over the first paroxysm and abort the time of the second lest it should prove fatal. In these cases the medicinal treatment, aside from the administration of quinin, cathartics and diuretics, should be largely symptomatic, and the symptoms combatted as they appear.

As convalescence approaches, a nourishing and easily digested diet should be arranged and the medical treatment consist of tonics and simple bitters with a moderate amount of healthful exercise.

BIBLIOGRAPHY.

Malarial Fevers of Baltimore. Thayer and Hewetson.
Osler's Practice of Medicine.
Lyman's Practice of Medicine.
American Text-Book of Medicine.
A Study of Some Fatal Cases of Malaria. L. F. Barker, M.B., Tor.
Centralblatt für Bakteriologie and Parasitenkunde.
Grundriss einer Klinischen Pathologie.
The Leucocytes in Malarial Fever. John S. Billings.
The Malarial Disorders of Large Cities with Special Reference to Chicago. Wm. E. Quine, M.D.
Malaria as a Water-borne Disease. W. H. Daly, M.D.
Medical Diagnosis. J. B. Herrick, M.D.

NOTE.—The writer is under obligations to Drs. Bishop and Weaver who kindly loaned him the pathologic specimens from which the accompanying drawings were made, also Drs. Tice and Richter of Cook County Hospital, through whose courtesy he was able to procure the blood specimens.

PRACTICAL NOTES.

Keratitis Dendritica.—Dr. Frank Allport says, that from experience with the last cases under his care, the application of absolute alcohol affords the most certain and rapid cure. He soaks a bit of lint in alcohol and scrubs the surface of the cornea with it. This may require to be repeated two or three times.—*Am. Jour. of Ophthalmology*, July.

Loretin.—Drs. Nichols and Gee state that, loretin has been used in the dispensary of the Medical College of Virginia for over a year under most careful and conscientious observation and with entire satisfaction. They have arrived at the definite conclusion that it not only equals, but surpasses, iodoform in its favorable action upon the processes of granulation and healing. As it is entirely odorless, it is obviously much more pleasant than iodoform to handle.—*Med. Bulletin*, July.

Camphor in Strychnia Poisoning.—Dr. A. K. P. Meserve reports the case of a child, 2½ years old, who was supposed to have taken 1-60 grain of strychnia. Characteristic symptoms of the poisonous action of the drug soon appeared. In the absence of a physician ten drops of tincture of camphor was given. The effect was almost instantaneous, the spasms relaxed and when a physician arrived, nearly an hour later, the danger seemed to be over, tannin and a larger dose of camphor, gtt. xx were administered, as a precautionary measure. The next day the child had fully recovered.—*Journal of Med. and Science*, July.

Diagnosis between Diphtheria and Tonsillitis in Children.—True diphtherial exudation may commence at the orifices of the crypts of the tonsil, but does not long remain limited to the tonsils and muco-lymphoid glands of the pharynx, as does the exudate of tonsillitis. The diphtherial membranes will extend within twenty to twenty-four hours to the pillars, velum or pharyngeal wall. The exudate of tonsillitis is thin and not materially raised above the surface. It is white, translucent and presents a living, clean aspect and no necrotic changes, while the exudate of diphtheria protrudes from the surface, is opaque and of a dirty yellow color. The exudate of tonsillitis is punctated, the spots corresponding to the follicular openings, and two or more puncta may join each other at their borders. In simple inflammation of the pharynx and in follicular tonsillitis as compared with diphtherial inflammation, the invasion is more sudden, the temperature higher and the redness of the throat more diffuse, and not confined to one side, as is frequently the case in commencing diphtheria. In follicular tonsillitis the yellowish-white spots can often be removed from the crypts which the secretion occupies, and the inflammation frequently ceases in thirty-six hours, whereas in diphtheria it

continues for a week or two. A doubtful looking layer of mucus is often removed by having the patient gargle the throat with some mild antiseptic or salt-water. The microscope of course clears up the diagnosis if the Kleb-Loeffler bacilli be present in large numbers.—Dr. Leo B. Auerbach in *Denver Med. Times*, July.

Observations on Surgical Shock.—Dr. W. N. MacArtney says: "In the human subject after crushing injuries of the limbs I have occasionally seen the pulse very slow and strong, but with a peculiar characteristic which should indicate to the careful observer that shock was present. It is a pulse difficult to describe, but which points unmistakably to a tendency to cardiac spasm. There is a prolongation of the systole, which encroaches upon and interferes with the diastole; cardiac spasm diminishing cardiac relaxation. This increase in the length of the systole once recognized in the pulse is not easily forgotten. This slow pulse indicates grave shock impending, and where I have observed it, when, in spite of protests, operation was done at once on the theory that with such a pulse no shock could be present, profound and sometimes fatal shock followed. It is a warning not to be lightly disregarded. In these cases do we have vaso-motor paralysis or does vaso-motor spasm precede the paralysis? The term vaso-motor paralysis, however, is so ambiguous that some uncertainty exists as to the exact meaning. There are vaso-constrictor and vaso-dilator fibers, and the term vaso-motor paralysis might be construed to mean either or both."—*Charlotte Med. Journal*, July.

Acute Milk Infection.—Dr. W. H. Wells says: One of the most fatal of diseases is cholera infantum. Its causes are always the same, namely, the poisons produced by various forms of pathogenic milk bacteria. It is always found in infants fed on artificial foods containing milk. It seems particularly virulent in infants fed continuously on condensed milk, or the various dextrinized foods which are intended to be used with milk. The child having once taken milk containing the germs no amount of subsequent feeding on sterilized or Pasteurized milk will prevent the continuation of the acute poisoning. The point in the treatment which is of the first importance is to take the child absolutely from a diet of milk and all substances containing it. The second indication is to free the system as quickly as possible from the milk poison with which it is already charged. The plan generally followed is to give the child no food at all for twenty-four hours and sometimes longer. During this time cold sterilized water into which fifteen or twenty drops of good brandy or whisky have been dropped, can be given to the child every hour.—*Philadelphia Polyclinic*, July.

Suburethral Calculi in the Female.—The *Rev. Int. de M. et de C.*, for June 25, remarks of an article on this subject in the April *Annales des Mal. des Org. Gen.-Ur.*, that it fills a gap in medical literature, as there is no other study of the calculi formed in the urethro-vaginal wall. These sub-urethral calculi are rare, and are different from the calculi of the urethra itself. The pocket forms in the anterior wall of the vagina, below the under surface of the urethra, into which it opens, one centimeter at least, above the meatus. The walls are usually composed of the vaginal mucous membrane, a layer of muscular tissue and of urethral mucous membrane, with a fibrous intergrowth and enlarged veins. The contents are a scanty yellowish liquid, sometimes sero-purulent, urine mixed with blood, with the calculi, generally ovoid in shape, but always of urinary origin. The symptoms are obscure; distress when seated, increased by walking and relieved or abolished, by reclining, with frequent and painful mictions, each followed by an involuntary discharge of a few drops of urine. Hematuria may also exist, with trouble in coitus. Investigation reveals a hard and painful tumor in the anterior wall of the vagina, with crepitation if there is more than one calculus. Certainty is attained by introducing a curved, grooved sound into the urethra, with the finger in the vagina. Spontaneous recovery is rare. The urethrocele sometimes discharges its contents into the urethra and heals, but new calculi are apt to form or a fistula persist. The best treatment is an urethro-vaginal incision, with resection of the pocket and complete suture on two separate planes.

Strangulated Hernia.—Dr. Alexander Hugh Ferguson says, that in a case of stranulated hernia, judicious and peristent taxis, carried out for five minutes, is long enough to tell of its inefficiency without an anesthetic. This being administered, taxis may be tried for five more minutes. At the expiration of this time, all preparations for herniotomy should be complete, and if taxis had failed, no time would be lost before liberating the strangulation. The dangers of prolonged taxis are: 1, ultimate failure and increased injury to the hernial contents; 2, rupture of the bowel; 3, the reduction of so traumatized and gangrenous a bowel as to cause peritonitis; 4, reduction en masse, *i.e.*, without liberating the bowel; 5, intraparietal reduction and reduction into the canal; 6, the non-detection of a second strangulation should it be present; 7, the rupturing of the sac and the forcing of the gut through the rent between the peritoneum and abdominal wall; 8, a diseased and perforated vermiform appendix may be reduced; 9, reduction en bissac, *i.e.*, the forcing of hernial contents into a congenital pouch or diverticulum; 10, bruising of the contents and hemorrhage into the sac is common. Most of these complications are rare, but they have all been encountered.—*Chicago Med. Recorder*, July.

Simple Treatment of Chronic Catarrhal Deafness.—Dr. B. Alex. Randall says, in the majority of cases, decided improvement will follow rational treatment, and though this may leave the patient possessed of only a remnant of hearing, it may be many times greater than before, and a most acceptable benefit to him. For the attainment of this result, no elaborate methods or apparatus are needed. "The naso-pharynx, from which the affection proceeded, must first be gotten into better condition. Only a small proportion of cases will present deformities or hypertrophies, which compel operative intervention to free the air passages. Vigorous spraying with an alkalin fluid in the hand atomizer, will generally suffice to cleanse the pharynx vault, but must be supplemented by mopping the region of the tube-mouths, and any parts to which the mucus clings, with the bent applicator, generally charged with glycerole of tannin or of iodin. An oil spray can usually advantageously follow, that of menthol-camphor, 1 to 2 per cent., for most cases. This gives a protecting coating to surfaces denuded of their usual covering of mucus, and about to be exposed to the outer air, while it medicates the cavities with a stimulating, disinfecting vapor, which will saturate every breath of air passing into the nose for a considerable while. It lubricates the nose, too, for the easy passage of the catheter." A good catheter is a very important factor. One of 3 millimeters external, and 2 millimeters internal diameter, 13 centimeters long, made of silver to secure pliability, serves in all but exceptional cases. The auscultation tube is very necessary. Only by its aid or the examination of the drum-head later can we determine that the tympanum is actually reached by the inflations. With the catheter properly placed it is easy to substitute the atomizer with its oily spray for the air bag and spray the fluid freely up the tube. Pure fluid petrolatum is recommended for this purpose, but probably more can be accomplished by medicating it, usually with from 1 to 2 per cent. menthol-camphor. Careful massage with the pneumatic speculum of Siegle or similar apparatus should complete the procedure. Without denouncing the "new" and "radical" procedures which are constantly being thrust into notice, better results can generally be secured by avoiding these innovations—*University Med. Mag.*, July.

Application of Gastric Juice in Therapeutics.—Fremont announced at a recent meeting of the Académie de Médecine, that he had been very successful in relieving and curing gastric disturbances, such as enteritis, grippe with gastro-intestinal complications, apepsia, etc., by administering gastric juice obtained by isolating the stomach of dogs, according to his method previously communicated.

Treatment with Serum from Convalescents.—Weisbecker has been experimenting with serum from patients recovering from measles, with which he injected others in the incubatory stage. He considers the results quite satisfactory, as the incipient disease was very much modified, and cases of measles pneumonia cured. He urges others to continue these experiments with serum which nature herself has immunized, in scarlet fever, measles, etc.—*Therap. Wochenschrift*, June 28, from *Zeitschr. f. kl. Med.*, Nos. 3, 4.

Tannigen in Diarrhea.—Tannigen is a diacetyltannin, and like tannalbin (see JOURNAL, June 27) does not release its tannin until it reaches the lower alkalin secretions. Bachus reports marked success with it in seventy cases, and no unfavorable accompaniments. In some cases the improvement was surprisingly rapid. The dose for an adult was as much as could be taken up on the point of a knife, and for children 0.25 grams, three times a day. The only failures were in a few cases with ulcerous or tuberculous complications. The diarrhea ceased in two or three days in the forty-one cases of children treated. He preceded the tannigen with three powders of calomel, at 0.008 to 0.01 gram, in severe cases (*Münch. Med. Wchnsch.* Dec. 37). Schneider calls attention to the fact that tannigen becomes viscid at the temperature of the body when moist, and therefore he recommends mixing some insoluble substance with it (like silica one-half to one-tenth part), to prevent the adhesion of the particles of the tannigen.—*Nouveaux Remèdes*, June 8.

Cardiac Therapeutics.—A hypertrophied heart sometimes needs aconite or bromids to restrain an excess of effort. If bromids are used, that of potassium should be avoided on account of the especially toxic action which it has on muscle. Perhaps a conspectus of the drugs which have been commonly used to add to the heart's force, will aid in making a rational choice.

Tonic and sedative—Digitalis, tonic, slows pulse, cumulative, contracts arterioles, diuretic; spartein and convallamarin, similar, but not so powerful and not cumulative; squill, practically digitalis plus a nauseating but stimulating expectorant: strophanthus, digitalis minus cumulative action and with very little action on the arterioles; caffein, digitalis plus cerebral stimulant and with especial diuretic action, not cumulative but secondary depressing action liable to occur; cactina, not well understood. General supporter—strychnin. General regulator—atropin which is stimulant to arterioles in small dose, relaxing in large dose. Emergency class—ammonia, accelerator and stimulant; alcohol and ether, slightly accelerating and stimulant, vascular dilators, later depressing; amyl nitrite, nitro-glycerin, etc., vascular dilators, scarcely stimulant to heart muscle.—Dr. A. L. Benedict in *Am. Therapist*, July.

Formalin in Dental Practice.—Abraham, in *Zahnärztliches Wochenblatt* is quoted in the *London Therapist*, June, as follows: By the use of this substance he has been enabled to avoid that form of secondary periostitis that so often complicates the treatment of periodontitis. It is his belief that the vapors of formalin have a regenerative influence upon the diseased periodonitum and promote restitutio ad integram. The method of formalin treatment made use of by the author more recently is less complicated, and less likely to cause pain by the formalin accidentally overflowing on the surrounding tissue. He makes use of a powder, calc. sulphas., 200; hydrarg. bichlor. 4. These to be finely mixed, also a liquid form, acid sulphuric 32; formalin, 100; aq. destil. 100. A few drops of the liquid are rubbed on a glass plate together with sufficient of the powder to form a paste, which, introduced into the previously dried root canal, solidifies in a few minutes. The crown can be filled with any stopping desired. The small quantity of corrosive sublimate and sulphuric acid in the paste, does not have any discoloring or corrosive effect on the tooth. The above proportions have been found to be the best as a result of numerous trials, and this formalin root cement may be employed safely after cautery of the pulp, etc., and for closing the foramen piacale. In a few cases, after employing this cement a slight periostitis without pain has appeared, continuing only one or two days.

Morbus Basedowi a Neurosis.—Hoesslin questions the rôle generally attributed to the thyroid gland in the evolution of this disease. He considers it a neurosis, and describes several unusual features in some cases he has had under observation for years (*Münch. Med. Woch.*, No. 2). One case (6 years) was distinguished by the marked rhythm of the pulse; it grew fast in the morning and slow at night. The attacks of tachycardia were also peculiar, beginning so suddenly that the pulse would jump from 130 to 250 in a minute, and ending as abruptly, with the phenomenon of a sudden violent contraction of the heart. These attacks lasted from an hour to weeks, and were most distressing. In another case the struma fluctuated in size, growing smaller as the tachycardia developed, and increasing as the latter subsided. A typical leucoplasia also formed on the tongue, forming a "lingua geographica" with painful cracks, as the disease reached its height, and subsiding with it, which Hoesslin attributes to sympathetic action of the vagus. In one case the patient ascribes his recovery to the vegetable diet which Hoesslin enforced for three years. He states that the attacks of tachycardia were much relieved or prevented by several successive rectal injections of opium, 20 to 30 drops of the ordinary tincture in a mucilaginous medium. All other treatment proved ineffectual.—*Deutsch. Med. Woch.*, June 25.

Brenz-catechuin Located in the Suprarenal Capsules.—It is announced from the Path. Inst. at Berlin that the presence of brenz-catechuin (pyrocatechuin) in the suprarenal capsules has been definitely established. It has hitherto baffled investigators, as it did not respond to the usual tests, owing to its combination with a still unknown substance, from which it has finally been successfully separated. It is secreted in the medullary substance, and it is an interesting fact that the part of the medullary substance next the cortex is the deepest in color. Brenz-catechuin is turned brown by contact with the air, and alkalins, which explains this fact, and is also probably the explanation of the bronze pigmentation in Addison's disease. As it is a poison, abnormal secretions of it may not only be responsible for the pigmentation, but also for the other symptoms of this disease. It has been much disputed whether it is to be attributed to abnormal functions of the suprarenal capsules or of the celiac ganglion. The present investigators consider it settled that the former secrete the brenz-catechuin, while the latter or the suprarenal plexus, neutralize its toxic effects in normal conditions. The announcement in the *Deutsch. Med. Woch.* for June 25, is soon to be followed by a more comprehensive report in *Virchow's Archiv*.

A Case of Antipyrin Eruption.—Dr. H. W. Webber of Plymouth, reports in the London *Lancet*, an interesting case of the above nature. The patient was a woman aged 53 years, who had two months previously undergone supravaginal amputation of the cervix uteri for cancer. "On Dec. 7, 1895, I found the entire surface of her body covered with a copious eruption exactly resembling in appearance that of a severe case of measles; the face and eyelids were also swollen. The temperature was 101.4 degrees F. and the pulse 102. She had been taking ten-grain powders of antipyrin twice daily for the previous three weeks for the relief of pain extending down the right thigh. These had produced no ill effects, but it appeared on the evening of December 5, she had eaten some unwhole-

some food, the results of which no doubt interfered with the proper elimination of the drug. Three grains of calomel and a mixture of ammonium acetate were prescribed, and the next morning the skin was almost free from eruption, the swelling of the face had subsided, and the temperature had fallen to 98 degrees. The antipyrin was omitted and pills containing a quarter of a grain of morphia were substituted. Finding, however, that these did not relieve the pain so well as the antipyrin had done, after a few days the patient recommenced taking the powders. After a second dose swelling and redness of the face came on and she had again to leave them off. No symptoms of cardiac depression appeared to be produced by the drug in this case."

Colles' Fracture.—Dr. J. B. Morgan (*Southern Medical Record*, July, 1896) says: "A great deal has been said and written about the diagnosis of this typical fracture; but two points only are necessary to observe, in order to arrive at a correct diagnosis. The marked displacement of the whole hand toward the radial side of the wrist, and the relative position of the styloid processes of the ulna and radius. In the natural condition of the parts with the arm hanging by the side, the styloid process of the radius is on a lower level than that of the ulna; that is to say, nearer the ground. After fracture, this process is on the same or higher level than that of the ulna. The first requirement in treatment is to effect exact reposition. The best way to effect this is with the patient's hand in pronation, you grasp his forearm with one hand, in such a way that while the radius is firmly held, your thumb rests just above the line of fracture. With the other hand, you grasp the hand of the patient, so that your thumb presses firmly upon the back of the lower fragment. The hand is now carried strongly back toward the dorsal aspect of the radius in forced and extreme dorsal flexion, until you feel by palpation that the lower fragment has become unlocked, and can be pushed into place by your thumbs, while at the same time, the patient's hand, under strong extension, is carried into the normal position. The best temporary and, in most cases, the best permanent dressing is Wyeth's modification of Pilcher's. It is applied as follows: Roll two pieces of a bandage, two inches and a half wide, into a compress about as thick as the little finger. After reduction is complete and the hand brought back into straight position, place one compress along the inner aspect of the ulna, extending from the anterior margin of the carpus upward, the other parallel with this, along the outer border of the radius, over the styloid process. Secure them by strips of adhesive plaster, one inch in width, wound around the wrist and arm, from the upper to the lower end of the compresses."

Etiology and Diagnosis of Epidemic Cerebro-spinal Meningitis.—Heubner announces in the *Deutsche Med. Woch.* for July 2, that he has succeeded in locating in the spinal fluids of patients suffering from epidemic cerebro-spinal meningitis, the microbe discovered not long ago by Jaeger, in necropsies after this disease. He has also established its pathogenic action by successfully inoculating with it a couple of goats, after failing with rabbits, guinea pigs and dogs. The microbe is found inside the pus cells, and is in the form of a diplo- or tetracoccus, not long nor lance shaped, but broad and arranged side to side, recalling the gonococcus in this respect. It develops luxuriantly on agar, dirty yellow in color, but shining like varnish. The experiments on animals showed that it is not a virulent microbe like the pneumococcus, which corresponds to the facts observed in epidemics of the disease. A pneumococcus meningitis ends fatally in a very few days. (Netter records sixty-one deaths in sixty-eight cases.) In epidemic meningitis on the other hand, only a half or third terminate fatally, and they frequently last weeks and even months. This also explains the relatively small number of cases in an epidemic. Heubner adds that when it is once accepted that this meningococcus intracellularis is the factor in epidemic meningitis, then Quincke's "lumbar puncture" with aspiration of the spinal fluid, will become of still greater importance, enabling us to differentiate at once sporadic cerebro-spinal meningitis from isolated cases of epidemic cerebro-spinal meningitis.

Hemostasis of the Bones with Shoe Nails.—The *Semaine Méd.* of July 8 states that Professor Rapin of Lausanne controlled the hemorrhage during a Kraske operation by stopping the blood vessels in the bone with a small shoe nail which he inserted in each. They were left in place until the suture was to be made; no further hemorrhage occurred after their removal. Six of these little nails sufficed to arrest completely the hemorrhage across the surface of the sacrum.

The American Blood Test for Cattle Tuberculosis.—Dr. Ephraim Cutter compares the morphology of human blood in health with that of tuberculous subjects and says that consumption can be detected before there is any appreciable lesion in the lungs. He states the points of similarity of kine tuberculous blood to that of man are: White corpuscles enlarged often more than in man; the mycoderma aceti or vinegar yeast is present as in man. It is on this yeast the diagnosis is made. He summarizes the advantages of the blood morphologic test over that of tuberculin, in cattle, as follows: 1. It is simple, readily learned, easily applied. 2. It introduces no diseased matter into the blood to set up efforts to expel diseased tissues (not to stop causes), which efforts of expulsion cause fever. 3. It allows the diagnosis of the pretubercular stage and the cure of the cattle; tuberculin is of no value except when there is actual disease and breaking down of the lungs. 4. It does not involve the loss of the kine. 5. It is always good so long as pre-tuberculosis or tuberculosis exists; and as in man, is of immense value in making negative diagnoses when neither tuberculosis nor pre-tuberculosis exist. 6. The amount of the yeast spores present is a sort of measure of amount of the lesion; the more the disease the more the yeast. 7. It can be applied often and harmlessly. 8. It is common sense in principle, as it treats of causes, while tuberculin treats only with results, not influencing causes. 9. It is the best means of detecting tuberculosis and pre-tuberculosis in man and kine. He says that the evidence is overwhelming that tuberculosis comes from food, in excess and long-continued, which either before or after ingestion undergoes the acetic acid fermentation.—*New England Med. Monthly*, July.

Lithium Preparations.—The *New York Medical Journal* gives the following abstract, which states that the *Therapeutische Wochenschrift* for April 5, mentions in a list of new remedies, two preparations of lithium. The first is the American tartarlithin or lithium bitartrate. The *Wochenschrift* remarks that it is much employed by American physicians in the treatment of Riggs' disease (pyorrhea alveolaris) on the theory that that form of suppurative gingivitis is of a gouty nature. The calcareous collections about the roots of the teeth are said to contain, beside the ordinary calcium carbonate and phosphate, a considerable amount of uric acid, calcium urate and sodium urate. Dr. E. C. Kirk is cited as having found tartarlithin a remarkably efficacious remedy in this affection, superior to any other lithium salt. Its diuretic action is manifest in many cases, but with some persons it acts as a laxative. Five grains may be given three times a day, dissolved in a glass of carbonic-acid water. The other preparation is lithium bromid, which is described as a grayish-white granular powder, soluble in water and in alcohol. The efficacy of this compound in gout is attributed by Mendelsohn to its diuretic effect rather than to any action as a solvent of uric acid. Polakow has employed lithium bromid in acute and chronic parenchymatous nephritis and found its diuretic action accompanied by diminution of the excretions of albumin and subsidence of edema, even when the patients were not on a milk diet or subjected to any other remedial measures. Polakow uses lithium bromid in the following prescription: Lithium bromid, 1 to 2 parts, sodium bicarbonate 4 parts, distilled water 200 parts. Mix. Sig.: Three or four tablespoonfuls to be taken in the course of twenty-four hours.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per Annum, in Advance $5.00
Single Copies . . . . . 10 Cents.

Subscriptions may begin at any time and be sent to

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 61 Market Street (Occidental Buildings), Chicago, Illinois.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, Venetian Building, Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership.

On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

Gentlemen already members of the Association should send their annual subscription to the Treasurer, or direct to the JOURNAL office.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the *Editor*, and all communications relative to the business of the JOURNAL, proof sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 61 Market Street (Occidental Buildings), Chicago.

Original communications are only received with the understanding that they are exclusively contributed to this JOURNAL.

INFORMATION WANTED.

It would greatly facilitate the prompt delivery of the JOURNAL to those members of the ASSOCIATION living in large cities, if they would kindly furnish this office with their street address in those cases where it is omitted from the wrapper of their JOURNAL, as we have been notified by the postmasters of the larger cities that second-class mail matter not having street address, would be placed in the general delivery to await call.

SATURDAY, AUGUST 8, 1896.

THE NOMENCLATURE OF DISEASES.

The want of an authorative and uniform standard nomenclature of diseases, for the purposes of registration, has long been felt in this country by registration officers and scarcely less by medical writers.

The confusion that long existed in the materia medica nomenclature in the middle ages was measurably corrected by SIMON of Cordo, who was physician to Pope NICHOLAS IV and chaplain to Pope BONIFACE VIII, but no similar service was rendered the profession in regard to the nomenclature of diseases until the present century.

As nearly every reform in medical methods in this country has had its origin in the AMERICAN MEDICAL ASSOCIATION, so we find that as early as 1847 a system of classification was adopted by the ASSOCIATION, and in 1851 a Committee was appointed "to consider the subject of registration of births, marriages and deaths, and to use their influence to cause the same to be adopted by their respective legislatures." The Committee had no general meeting, but the chairman, Dr. EDWARD JARVIS, of Massachusetts, reported at the meeting held at Washington in 1858 in favor of the nomenclature prepared by Dr. WILLIAM FARR, of London, which had been adopted by the Registrar-General of England, and in this country by Massachusetts.

The report of Dr. JARVIS was not adopted at this meeting, but referred to a special Committee consisting of W. L. SUTTON of Kentucky, EDWARD JARVIS, Massachusetts, EDWARD M. SNOW, Rhode Island, WILSON JEWELL, Pennsylvania and R. W. GIBBES, of South Carolina. The report of Dr. SUTTON the following year, signed by *all* the members, recommended adherence to the nomenclature adopted by the ASSOCIATION in 1847, because many of the States had subsequently adopted it and it was still in use. They made very few alterations, but left the twelve classes according to the original and added two, viz.: 1, zymotics; 2, diseases of general ulceration, or unlocalized seat; 3, diseases of the nervous system; 4, diseases of respiratory system; 5, diseases of the circulatory system; 6, diseases of the digestive system; 7, diseases of the urinary system; 8, diseases of the generative system; 9, diseases of the locomotive system; 10, diseases of the integumentary system; 11, old age; 12, from external causes; 13, from causes not specified; 14, stillborn.

No action was taken on the report except to refer it to a committee, and the minutes are silent as to any further action, but the meeting in New York City in 1864, on motion of Dr. CYRUS RAMSAY of New York, passed a resolution of thanks to Dr. APPLETON HOWE of Massachusetts and Dr. JOHNSON GARDNER of Rhode Island for having, while serving as State senators in 1842, secured the adoption of the (FARR) nomenclature. In 1867 Dr. CHRISTOPHER C. COX presented the ASSOCIATION with advance sheets of the "Provisional" nomenclature, proposed to be adopted by the Royal College of Physicians of London.

At the meeting held in 1869 a Committee was appointed "to determine what alterations, if any, are necessary to adopt the 'Provisional' nomenclature to general use in the United States." This committee consisted of FRANCIS GURNEY SMITH, GEORGE B. WOOD, S. H. DICKSON and ALFRED STILLÉ of Philadelphia, S. E. CHAILLE of New Orleans, J. J. WOODWARD and GEORGE A. OTIS, U. S. Army, W. S. W. RUSCHENBERGER and NINIAN PINKNEY, U. S. Navy, ALONZO CLARK of New York, EDWARD JARVIS of Massachusetts, WM. M. MCPHEETERS, of St. Louis, L. P. YANDELL of Louisville, A. B. PALMER of Ann Arbor, THEOPHILUS PARVIN of Indianapolis, and R. F. MICHEL, Alabama. Surely as strong a Committee intellectually as was ever appointed by the ASSOCIATION on any subject. This committee issued 1,000 printed copies of the English and Latin portion of the proposed nomenclature to the members of the ASSOCIATION for criticism and comment, but outside of the membership of the Committee, but three replies were received by the chairman; a majority and minority report resulted. The majority favored the adoption of the following resolution:

Resolved, That the AMERICAN MEDICAL ASSOCIATION be requested to appoint a committee to prepare a nomenclature of diseases which, on approval by the ASSOCIATION, shall be

submitted to the medical practitioners of the United States for adoption and observance.

Dr. AUSTIN FLINT and Dr. CHAILLE favored the adoption of the London nomenclature.

The Medical Society of New York sent a paper on the subject of the nomenclature, and through Dr. ALFRED UNDERHILL moved that it be substituted for the report of the Committee, but the majority report of the Committee was adopted.

In accordance therewith, at the meeting held in Philadelphia, 1872, the Committee reported the preparation of a nomenclature. They offered a system based upon the provisional nomenclature of the Royal College of Physicians, with some additions and modifications. They gave precedence to the English over the Latin names, an example which was followed when the London nomenclature was finally published. The Committee reported that they had held nearly fifty meetings in the two years. This report also had a majority and minority report, Drs. A. B. PALMER, AUSTIN FLINT, J. J. WOODWARD and GEORGE A. OTIS asserting that they had not attended the meetings of the Committee and had had no time to examine the report. The ASSOCIATION thereupon voted the distribution of the proposed nomenclature before final adoption. At the meeting at St. Louis in 1873, the "Philadelphia" nomenclature, as it was called by Dr. WOODWARD, was reported by a majority of the Committee. Dr. WOODWARD, representing the minority, asserted that the proposed nomenclature was inferior to that of the British, and that "as it was advisable to have some nomenclature which should be recognized wherever the English language was spoken, it would be advisable, until some definite plan was adopted, for that of England to be used, there being so many objections to that of Philadelphia as to render its adoption inexpedient." He then proposed the rejection of the majority report, and the appointment of a committee of three whose duty it should be to communicate with the Royal Physicians of London, and to negotiate for representation of the AMERICAN MEDICAL ASSOCIATION in the first decennial revision of their nomenclature. This was adopted, and the Committee consisted of Drs. WOODWARD, EDWARD JARVIS of Massachusetts, and ALFRED STILLÉ of Philadelphia. It was also resolved, on motion of Dr. TONER, that the occasion of the centennial celebration at Philadelphia was opportune for the consideration of plans for the adoption of an universal nomenclature for use by the profession throughout the world.

The action of the ASSOCIATION was in effect the adoption of the London nomenclature, and in October, 1873, the late Dr. JOHN M. WOODWORTH, the Supervising Surgeon-General of the Marine-Hospital Service, issued formal regulations adopting the provisional nomenclature of the Royal College of Physicians as the official nomenclature for the use of that Service, and in 1874 and 1878 republished the nomenclature and distributed them to the Medical Corps, and to health officers generally. The American Public Health Association also indorsed the nomenclature in 1873.

The second edition of the nomenclature began to be considered by the Royal College in October, 1880, and to the Committee, Dr. CHAS. F. FOLSOM of Boston, and Dr. JOHN S. BILLINGS, U. S. Army, gave aid and suggestions. The revision was completed and the book issued late in 1885. This revision was adopted by the U. S. Marine-Hospital Service by a circular issued Nov. 7, 1885, by Surgeon-General HAMILTON.

The third edition of this nomenclature, being its second revision, has just been issued by Her Majesty's Stationery Office in London, and we regret to notice that no American representation was had in this revision. The Italian version which was included in the former editions has been very properly omitted from this. This revision necessarily has made many changes, for pathology has been greatly changed by the discovery of the microbic cause of many diseases; and the section relating to bacteria is entirely new.

There may well be question whether more frequent revisions are not required, for no sooner has a nomenclature been promulgated, than the progress of discovery and changes in art make portions of it behind its time, and by the end of the decade, the whole nomenclature is well-nigh obsolete, although, for the essential of uniformity, it must still be used until officially changed. The general plan of former editions has been retained in this, while many new terms have been introduced.

THE LEAST ATTRACTIVE DUTY OF THE SURGEON.

The specialized surgeon of the present has so many things in his favor, as compared with the surgeons of fifty and a hundred years ago, that it becomes necessary at intervals to "shake him up," and remind him of his full duty, a part of which is unwelcome to the minds of some of us. It is related of the late Professor ALFRED C. POST, of New York, that his sense of rectitude led him to unduly emphasize, before his classes in surgery, the fatalities that occurred in his practice. Dr. POST was a surgeon in every sense of the word; he was actuated always and only by the highest motives, and yet his formula, "But, gentlemen, the patient died," recurred so frequently in his prelections that the average student often wondered, what, after all, is the good of surgery? Both VON NUSSBAUM and Sir JAMES PAGET have recognized the less welcome side of surgery, its contretemps, its disasters. We quote the *British Medical Journal*, May 16, in further confirmation of this thought which is never far distant from, if never fully formulated in, the genuine surgeon's consciousness: "The ideal of the surgeon, as PLATO said of

his ideal republic, is laid up in paradise for him who will behold it and regulate his life according to it. And the recognition of all the slight defects of average surgery will surely help toward a clearer sight of our ideal. In every walk of life, the recognition of our demerits is essential to improvement of our practical work. An operation that is faultless is a wonder indeed, and most operations are far from faultless; the exquisite accuracy, fine touch, resource, insight, swift decision which the public attribute to the surgeon are seldom seen in practice. But if the surgeon will keep a daily record of his slightest faults he will find a sure way of improving his skill. 'Live in your own heart,' says PERSIUS, 'and you will then find how scanty your furniture is.' And if he desires the advancement of surgery, let him not be silent, or like an ostrich hide his head in the sand of success and think that nobody sees the tail feathers of failure. It would be a good rule for every hospital surgeon to point out to those round him at least one slight defect in each operation, and seldom to publish isolated cases; for these, as a rule, are of no great value unless they are ahead of what other men have done.

"Two suggestions are pertinent to him who wishes to fill the blank left in the literature of surgery by the want of any regular record of our faults. It is not proposed to set apart a confessional of surgeons, for that has been tried before, and commonly with the result that the confessions were loaded down with an unprofitable vicarious impleading of the *faults of others*. But there is a real need of a careful and complete statement of the defects of surgical work. VON NUSSBAUM'S essay, published in 1887, is only a sketch of what might be done. He begins with the dangers of the anesthetic; next, the general risks of operation, such as hemorrhage, septic absorption and traumatic delirium; then he considers the mistakes made in various operations, some of them belonging to minor surgery, such as tenotomy, circumcision, puncture of hydrocele, removal of tonsils; others being of a graver character, such as tracheotomy, ovariotomy and the operation for strangulated hernia. He gives examples of faults in all these operations and in many others; and indeed the ways of error in tracheotomy and herniotomy, to take these two only, are many and hard to avoid; each one of them might well afford a whole chapter of accidents. But his essay is short, incomplete and somewhat old fashioned; we want a full, careful, fresh account of the defects of surgery. Happily grave errors are rare; it is the trivial faults, the slight mistakes of skill or judgment, many of them so slight as to have the least influence on the result of the operation, that require to be set forth. The risks of the anesthetic, the drawbacks of this or that antiseptic lotion or dressing, the disadvantages that may attend the boiling of instruments, these might go toward the first chapters of the essay. But the essayist would find that his chief business lay apart from these subjects, in collecting, arranging and criticising all the small techinal faults of operative surgery, and thus raising the standard which we desire to reach.

"Our second suggestion is that surgeons should publish less often isolated cases, and more often groups of cases, sets of consecutive operations, every example that has come under their care. This has been done by many surgeons—Sir SPENCER WELLS, Mr. KNOWSLEY THORNTON, Mr. HERBERT ALLINGHAM, and others; the method may be studied in such works as BARDELEBEN'S Klinik, or in some of our hospital reports. This is the way to advance knowledge and to carry conviction; and we may be sure, for example, that Sir SPENCER WELLS would have had even greater difficulty in establishing the success of ovariotomy if he had published only selected cases; it was just because he published every case that he won the field for the operation and for himself a name that will not soon be forgotten."

It is as VON NUSSBAUM says, a single reverse has more teaching in it than ten successful cases. Students are quick to remember every criticism that the surgeon makes on himself, and trust him all the more for it; and they tend to distrust him who seems always satisfied, or finds fault in everybody and everything but himself. Again, the reports in the medical press and at medical societies of isolated successes, unless they mark some definite advance of surgery, do not teach much to those who read or hear them; they make us wish that the surgeon had published other cases where the result had been less pleasing to himself; they raise unkind doubts whether his experience is not in inverse ratio to his readiness to publish it. And it is certain that in the long run we hesitate to believe in the man who always believes in himself; and he who begins by publishing nothing but his success may end by having nothing to publish.

The confession and record of an imperfect work, and the publication of consecutive rather than isolated cases, are a sure way to improve the details of operative surgery; and unless we do these things we remain exposed to the reproach that the surgeon's art owes its high place in the minds of man not wholly to his own skill and insight, but in some degree also to the fact that he practices it on a fabric more frail and more precious than anything else in the world.

SHOULD GOVERNMENT ENCOURAGE MEDICINE, OR QUACKERY?

It is high time that the American medical profession should ask the American people if it is the proper function of our Government to enact and execute laws furthering the science of medicine, and therefore the health of the community and the progress of civilization, or whether it is much longer to ignore these noble purposes and continue to support downright quackery? A most striking instance of this pernicious result of legislation has lately come to light in the last Report of the Postmaster General, in which he shows that the Government annually carries 133,000 tons of mail matter costing at the rate of eight cents a pound, for which there is received in postage but one cent a pound; this results in a direct annual loss of about eighteen and one-half millions of dollars. It would be impossible to say what proportion of this second-class mail matter thus carried at so heavy a loss to the Government is nostrum and

"patent medicine" advertisements, but there can be no doubt that much more than half is this execrable trash. Hence we are deprived of one-cent postage on letters, a thing that long ago should have been brought about, in order that the nostrum vendors may make fortunes. Beside their larger direct profits wrung from the ignorant and poor, we give them an indirect Governmental bonus of ten or fifteen million dollars more out of the postal revenues. What insane folly!

But this was not intended. It is an unseen consequence of the mistaken policy that we should publicly encourage the diffusion of printed matter by lowering the postage upon second-class mail matter. Now, the reading of ink-marked white paper is *per se* no aid either to intelligence or to morality, and Government should very properly leave it to private enterprise. It has, as we see, got itself into a box by the mistaken aim, and a large part of the labor of the post-office officials is now expended in trying to exclude from the mails the filthy and injurious literature which the law permits the greedy advertiser to put there. We may reasonably hope for some remedial legislation which shall undo the blunder. But physicians should aid in bringing it about. It will hardly come of itself.

A still more powerful effect of laws, and one that is no unseen or unintended happening, is Governmental protection and encouragement of quackery by our patent or copyright laws. It may be that some of the so-called "patent" nostrums are comparatively harmless when considered in their direct effects. But, by encouraging reliance upon them instead of upon intelligent diagnosis and treatment, even these do incalculable harm. But what physician does not know that the majority of these vile concoctions are directly and positively injurious? In how many ways are they not directly injuring the poor in health and pocket, and indirectly preventing medical progress and sanitary civilization? If a cure-all can repair the damages of disease, why prevent the disease by sanitary legislation and a lowered death rate? What imaginable reason except this and allied facts is there for the difference between the English and the American death rate? If we were as wise as London in these matters, the number of our dying would each year be very many thousands less than it is.

How much longer are we to continue our hideous policy of protecting the nostrum vendors by United States laws and so-called patents? Why has the United Profession of Medicine had nothing to say to the United Quacks of America about this matter? Are we afraid of the silly gibe that we are acting simply from selfishness and for our "monopoly" of medicine? Let the answer be heard that they who unpaid carry on the free treatment of all comers in the thousands of hospitals and dispensaries, may not be charged with selfishness by patent medicine vendors and syndicates!

Why do not our Congresses of medical men and our American Associations act to abate the disgrace? When the "homeopaths" meet in general convocation, a big proportion of their energies and time is spent in the consideration of public laws in their interests and in agitation concerning their public estimation and position. "And for that very reason we should not do the same," do we hear? For that very reason, we answer, we should—not do the same, but do better. The public does not understand or care about our technical questions, and somewhat justly concludes that if we care nothing about our own professional well-being and estimation, and especially about national medical questions, we are therefore more interested in fads and theories than in public health. In the one exceptional instance when we have spoken out—*rê* vivisection—this mistaken idea of professional feeling on the part of the public is, unfortunately, likely to be increased. The public are opposed to what they call "vivisection." The "homeopaths" are, of course, with the public and against us. It therefore is doubly unfortunate that we are extremely likely to find an increased hostility toward medicine in the minds of the people and, rest assured, especially in a democracy like ours, this hostility will make itself disastrously felt in wretched laws and bitter agitation. We already have enough of this prejudice to bear in private, professional and public life, without having any further increase of it. In what way can we offset and neutralize it better than by showing interest in the public welfare, and by attempting to influence legislation on medical matters for the public good. The ignorant and the nostrum syndicates will for awhile roar at us all the more, but the leaders of public opinion, and indeed the great body of intelligent people, will be with us. Beside all this, it is wrong to longer permit this wrong to go on. "We must educate our masters," and if we would only collectively and thoroughly take the matter up, we could soon bring such influence to bear upon our Congress at Washington as to convince even that body that our contention is just. The copyrighting a name as a trade-mark of a nostrum, keeping constituents and method of manufacture secret, instead of being justified by our law-makers, should be made a crime. At present the Government stamps the crime with its hall-mark of favor, and the poor deluded public is encouraged in its stupidity by the very authority that should be its protector. There is no work, scientific or other, to which the AMERICAN MEDICAL ASSOCIATION could devote a tithe of its energies better than to this of abolishing the laws at present the very condition of quackery. Every physician should personally write his representatives in

the House and in the Senate, and petitions signed by every practicer of scientific medicine in the country should be presented to both bodies. A committee of leading members of the ASSOCIATION should also be appointed to effectualize the reform. Even the "homeopaths" should be willing to join in such a movement.

INSANITY AND DIVORCE.

"Modern Barbarism" is the title given by a well-known and well-edited New York religious weekly to the recent action of the German Reichstag in making incurable insanity a legitimate cause for divorce, and to the commendations of this legislation by an English paper, the *London Chronicle*. The latter had said, in effect, that in making this enactment the German legislature was in accord "with the common sense of civilized mankind," and that the existing law of England which does not recognize insanity as a cause for divorce, was only "a piece of barbarian bigotry."

From an alienist's medical point of view the stand taken by the religious journal can only be commended. Insanity acquired after marriage is a misfortune only comparable with other serious diseases, and it should therefore be no more considered as a cause for complete legal separation of husband and wife than should tuberculosis, organic heart disease or any other chronic and presumably incurable disorder. If the marriage relation were nothing more than a mere partnership for the purpose of keeping up the population, sterility would be a sufficient ground for divorce and insanity perhaps a still more valid one. But there are many other considerations to be taken into account, both ethical and social, and in a purely medical point of view divorce for insanity can not be considered justifiable. The subject was fully considered and discussed in France several years ago and the conclusion reached was much more creditable to the moral sense of the nation than appears to have been the case in Germany. While most cases of long-continued insanity are probably permanent or incurable, it is almost impossible to predicate this in any particular case with absolute certainty, and unexpected recoveries are constantly occurring amongst the chronic insane. The mere fact that the puerperal condition is one of the common causes of mental derangement in women is enough to affect the question; it would be manifestly wrong to make the wife suffer for what is partly at least the husband's doing. The chances of and temptations to actual wrong-doing that such a cause for divorce would afford are not to be ignored, but this is a sociologic rather than a purely medical consideration.

It is advisable, indeed, that the insane should not propagate their infirmity, and a legal restriction of the conjugal relations might be desirable. This, however, would apply in many conditions of mental disease that are not to be included under the form that are proposed as a cause for divorce. Insanity is, of all disorders, the most liable to recur, and a single acute attack, as a rule, implies a cerebral weakness or instability that has a bad outlook as regards the inheritance transmitted to offspring, and should from this aspect be considered as valid a pretext for divorce as a chronic, so-called, incurable type of the disease.

There are other points that can be made against the admission of chronic insanity as a legal cause for divorce, but the above are enough, from a medical point of view, to condemn it. If incurable or transmissible disease of any kind is to be so considered, there are other affections that should precede insanity; the governmont itself should take the initiative and no more regard should be given to one side than the other; the elements of plaintiff or defendant should not be allowed to enter into the case. Our civilization, however, is not tending toward such a state of affairs, and the action of the German parliament is not in the line of progress any more in its medical than in its moral aspect. Perhaps "modern barbarism" is about as suitable a term to apply to it as any that can be suggested.

LOCATION OF THE JOURNAL.

The following is the result of the ballot cast on the permanent location of the JOURNAL, as counted by Trustees D. W. GRAHAM and JOSEPH EASTMAN:

Chicago	2128
Washington	810
New York	24
Philadelphia	48
St. Louis	22
Baltimore	4
Louisville	3
Cincinnati	3
Boston	2
Atlanta	2
Cleveland	1
Columbus, Ohio	1
Milwaukee	1
Salt Lake City	1
Hamilton, Ohio	1
Pittsburg	1
Elmira, N. Y	1
Sedalia, Mo	1
Little Rock	1
Indianapolis	1
San Francisco	1
Camden, N. J	1
Charleston, S. C	1
Buffalo	1
Total votes cast	3061

Five thousand two hundred and sixty-five ballots were issued to members, 2,204 of whom did not vote. Several ballots were signed but no place specified, and several were filled out but not signed; these were necessarily thrown out.

Chinese Graduates in Medicine.—Two Chinese girls have been graduated from the University of Michigan, Department of Medicine and Surgery. They were sent to the university by Miss Charlotte Howe of the mission school at Kinglang, and are to act as medical missionaries in China.

CORRESPONDENCE.

The Michigan Medical Legislation League.

Open Letter No. 2 to the Members of the Medical Profession (regular) in Michigan.

DETROIT, MICH., Aug. 3, 1896.

In response to my brief, but earnest appeal to the adherents of regular medicine and the friends of suffering humanity in this State, published in the JOURNAL of the 23d ult., two letters appear in the issue of August 1, just received.

One of these letters is signed by the President of the so-called "League," and the other by his "alter ego," J. H. Carstens. Simmered down to their ultimate elements, these communications, with apparent politeness, charge me with "illiberality" and with Phariseeism, and my attitude toward the question at issue as lacking in patriotic duty. To all such personal accusations the only answer that I have time or inclination to offer is written and can be plainly read in the quarter century record of my professional life in Michigan.

Neither do I propose to condescend to recriminations or "tu quoque" charges of any kind. Surely if the "Catholics and Lutherans and Presbyterians" can afford to be ranked with or compared to the indefinite, inglorious and mercenary sects which are so eager to grasp at any recognition by or association with true scientific unselfish regular medicine; surely, I say, if the friends of these three great branches of the Christian church can rest satisfied with the use which the president of the League has seen fit to make of their time honored names, it is not for a humble sinner like myself to undertake their vindication. But will the president kindly show us where we may be able to read and learn of the occasion when any one branch of the Christian church or the church as a whole ever formed or sought to form a coalition for the attainment of any great ecclesiastic undertaking, and in so doing asked its combined enemies to accept the controlling power and assume the honors which belong to the majority? While it is quite true that both religious and secular bodies have formed from motives of policy coalitions with other bodies more or less inimical to them, has the spectacle ever before been witnessed in the history of nations, of churches, or of professions of the party overwhelmingly in the majority, and possessing the greater power, humbly proposing that it be graciously and with humility accorded a position in the coalition inferior in point of numbers (and therefore of power) to that of its combined enemies?

I am not opposed to a Legislative Medical League as such, but I am opposed to any proposition which amounts to a confession of weakness on the part of the medical profession, of which I am a humble but a loyal member.

The president of the League says, and truly, that "our efforts at convincing the people and politicians of the wisdom of adopting measures which we alone promulgate have repeatedly failed, as the history of medical legislation, not only in this State, but in every other State in the Union, attests."

Does the president wish us to understand him to say that, "Because well known errors and weaknesses of human nature have in times past operated to prevent us from getting a good law, therefore, we have no resource but to turn round and labor for a *weak, inadequate and infamous law?*" "Half a loaf better than no bread" is a good old homely adage, but if that half is saturated with cold poison, how then? "*Better fast a little longer.*" Would it not, my friends, be better, wiser, more worthy the history and traditions of our noble profession to pause and study carefully the causes on our own part of failures in the past and wake up to a true and just sense of their nature, their magnitude and the means of avoiding and counteracting them in the future? Two or three lines in the very characteristeric letter of my friend, Dr. Carstens, to my mind, gives the whole case of the Michigan Medical League dead away. They are as follows: "It will give the young man a chance by preventing competition;" also the immediately succeeding lines as follows: "It makes no difference to Dr. Maclean or myself how many or how few quacks there are in this State, but it does make a difference to the new beginner." "*The public be damned!*" The letter and the spirit of these sentences are, so far as I am myself concerned, *absolutely repudiated.* If I had the strength and the opportunity to do ten times the amount of my present work, I should still take as great an interest in this legislative question as I now do, and I should still feel grieved and humiliated that in spite of my utmost exertions thousands of my fellow citizens are still medically, morally and financially writhing in the clutches of the omniverous quack.

As to the young doctor himself, his interests have ever been a sacred and affectionate object of my most earnest consideration, and it is in the defence of his best and highest prosperity, and his good name that I protest against any such accusations of weakness on his part, no matter from what quarter they may come. I should pity and despise the young doctor, ambitious for professional distinction and usefulness, who should be willing to accept and endorse this cringing proffer of protection. *Protection from what?* May I be permitted to quote here a single sentence from my open letter No. 1. "Can it be possible that at this late date the regular profession in Michigan feels itself so feeble and unable to maintain itself that it stands ready to defy the public professional sentiment of this and all other lands in the hope of obtaining a milk and water degree of protection (*for themselves rather than their patients*), enter into a combination and unholy alliance with its most insidious and meanest foes and place the balance of power in the hands of the enemy?"

The president of the "League" complains of the term unholy alliance, and perhaps I should have used some other term, and I will leave it to the readers of the JOURNAL who have the instincts of honorable regular physicians to say what it shall be. One of the members of the executive board of this "Legislation League," with whom Dr. Shurly and others have formed an alliance, is Dr. C. Edson Covey, 6 Madison Ave., Detroit. The following is his advertisement, which appears daily in Detroit papers:

"Specialist in private or delicate and all chronic diseases. Confidential. Call or write Dr. Covey, 6 Madison Ave,, Detroit."

When we consider the full significance of this advertisement, we do not envy Dr. Shurly any glory he may get from it, even though the profession generally do not consider it unholy. Quackery and charlatanism is condemnable in every field of human endeavor and in none more so than in the matter of "Medical Legislation."

If the regular profession in Michigan and in America hopes ever to assume and enjoy the regal and just position freely accorded the profession in other lands, we must study the history and emulate the example of the profession in these countries. Let us confess our manifold sins and transgressions, too numerous and too well known to require rehearsal here. Let us go back to fundamental principles. Let us study not merely the letter, but the spirit of the code of ethics of our National Association; let us live up to its teachings and laws, using them not as a cloak for Pharaseeism and disloyalty, but as a true living and ennobling inspiration and guide for all the duties and relations of professional life.

This may seem utopian and the expression of a forlorn hope, a vain aspiration in the direction of the unattainable. But is it not more worthy of our vocation to persevere in our efforts and die if necessary in our upward and onward struggle than to sell our birthright for a mess of pottage and barter all our hard earned power and honor for any such ficticious aid and comfort as this alliance could possibly promise?

The last two sentences of the "President's" letter charge me with error as to the statistics of the Executive Board of this "League." If so, all I have to say is that I am unable to read and understand plain English when I see it in plain print. But let that be as it may. Neither of these, mine, accusers have assailed the statistics upon which my main plea is based, namely, that the Board of registration provided for in the main clause of the bill, is by the request of the president and all his "League" to consist of nine members, *not more than four of whom shall be regulars, the other five to be just about any thing you please to call them.*

Before closing it is impossible for me to avoid calling attention to a most marvelous misstatement on the part of Dr. Carstens as follows:

"Dr. Maclean has been at the head of the Legislative Committee of the regular State Medical Society for twenty years, and has never accomplished anything." The facts are:

1. Dr. Maclean was chairman of that Committee for *one year and no more.*

2. No such thing as a Legislative Committee of the State Medical Society has existed except during occasional years and then by special appointment.

3. Dr. Maclean might have been successful in his earnest effort to secure a just law, but for three things, namely:

1. The dignified apathy and the masterly inactivity of the regular profession. 2. The beaverlike political activity, the wire pulling and the perfect consolidation of the quacks of every denomination. 3. Dr. Maclean's unalterable determination to stand true to that which he believes loyalty to the great science and art of medicine demanded and still demands of every individual who owes allegiance thereto. The tone and tenor of the two letters herein reviewed, together with the general "facial" characteristics of the Michigan Medical Legislation League, can hardly fail to excite the dread that the signification of the term "loyalty" as understood and interpreted by the fathers and friends of the *League* is in great danger of undergoing an unfortunate and degenerated form of metamorphosis, and being changed into "a something" utterly different from that which has always been accepted and approved by the fathers and friends of the regular profession of scientific medicine in this and all other countries from the dawn of civilization down to the date of the conception of the Michigan Medical Legislation League.

Dr. Carstens closes his very striking letter in these words: "I am happy to say that it is the overwhelming sentiment of all regular practitioners, of all so-called (*sic*) 'homeopaths' and of all the quacks of this State that the further influx of charlatans and quacks should be checked."

My friends, this is a truly wonderful sentence from a man in Dr. Carstens' position, and it will repay your careful dissection and analysis. His right to speak authoritatively for all the so-called "homeopaths" and quacks of this State, I have neither the right nor the desire to question, but by the authority of written letters and countless verbal declarations, I have not only the right, but equally the pleasure of giving here an absolute denial to the only statement contained in this never to be forgotten sentence, worthy of our attention, namely, that which in so wholesale a manner presumes to commit "the profession" to this preposterous scheme of abdication and degradation and evil association.

Finally, brethren, let me assure you that nothing could be further from my inclination than strife and dissension. If the accouchement of this anomalously begotten "League" *should* by any chance be successfully accomplished, and if by any chance the resulting progeny should after all prove to be a healthy, vigorous and noble infant, and if I should live long enough to see genuine signs and marks of "good breeding" with a promise of a life of usefulness and honor, I will be found ready to take my hat off to the youngster and wish *him, her,* or *it* Godspeed. Not only so, but I will be found equally ready to pay all reasonable honor and respect to its strangely assorted progenitors and apologize for any "remarks" I may unadvisedly have made about them at the time of their courtship and marriage.

But if, on the other hand, to speak seriously, the effect shall prove to be, as I fear it will, to disgust and deter *desirable* and to attract *undesirable* persons to the ranks of the profesion in this State, thereby leveling the profession down and the irregulars and charlatans up, I will at least, no matter how much such a result would inevitably grieve me, have the satisfaction of having done what little lay in my power to protect and defend science and humanity from so great a misforune, and I will do my best to rest satisfied with the verdict of approval from what to the individual is the highest of all earthly tribunals, namely, the tribunal of *my own conscience.*

DONALD MACLEAN, M.D.

Was Goldsmith a Physician?

SYDNEY, AUSTRALIA, June 29, 1896.

To the Editor:—In your issue of May 16, Dr. John Morris publishes an extremely interesting and scholarly article under the above heading. There is great doubt concerning the dates of the various incidents in Goldsmith's life, and as I may be able to throw some light upon the matter, I send you a few remarks on the subject of the poet's life in Trinity College, Dublin.

Dr. Morris states that Goldsmith was born at Pallas, or Pallasmore, in 1728, that he entered Trinity College in 1745, and took his degree of B.A. in 1750. John Forster, in his "Life and Times of Goldsmith," gives these dates also, but they are not in agreement with the records of Trinity College.

The Rev. Dr. Stubbs, in his "History of the University of Dublin," published in 1889, gives in an appendix, some university records of well-known members of the college during the seventeenth and eighteenth centuries, from which I extract the following passages: "It may be interesting to inquire what the college records inform us as to the undergraduate career of the eminent men who were educated in Trinity College during the first two centuries of its university work. It must be remembered that no records of terms or examinations during the first century of the college have been preserved. The Senior Lecturer's books, which contain an account of the attendance of the students at the term examinations, and of their answering, were not kept until the middle of the eighteenth century. The old Senior Lecturers, however, filled up in their own handwriting a series of books in which were entered the names and the Christian names of all who were admitted into the college as students, the names and professions of their fathers, the place of their own birth, their own age at entrance, the date of their admission, the name of the schoolmaster who had educated them, and of their college tutors. The oldest of these books which remains begins in January, 1637-8, and continues to November, 1644. The entries then ceased, and they were not resumed until January, 1652, from which day to the present there is a continued record of the admission of students." Then follows a list of the most notable students of the college: "Goldsmith, Oliver, admitted as Sizar 1744, aged 14 years; son of the Rev. Charles Goldsmith; born in Westmeath; educated by Mr. Hughes; college tutor, Mr. Wilder. B.A. 1750." He was the celebrated poet, and the author of the "Vicar of Wakefield." As this entry was made during Goldsmith's stay in the college, there is every reason to believe that the statements it contains are correct. Therefore, Goldsmith was born in 1730 (not 1728), at Westmeath (not at Pallas, which is in the County Longford), he entered Trinity College in 1744 (not 1745), and took his degree of B.A. in 1750 (not 1749). The Catalogue of Graduates, published in 1869, gives the record, "Goldsmith, Oliver, B.A., *Vern.* 1750."

Now, Forster states that the Goldsmith family moved from Pallasmore in 1730, "to a respectable house and farm on the verge of the pretty little village of Lissoy, 'in the County of Westmeath, barony of Kilkenny West,' some six miles from Pallasmore, and about midway between the towns of Ballymahon and Athlone." From this it would appear that the poet was born after the removal from Pallas.

In my opinion, the dates given by Dr. Morris and other biographers of Goldsmith are not quite accurate.

Yours very truly, GEORGE LANE MULLINS, M.A., M.D.
Trin. Coll., Dublin.

Medical Grievances.

NEW YORK, July 18, 1896.

To the Editor:—I respectfully submit the prevailing grievances of the profession, as near as I have been enabled to collect them:

1. Medical appointments in free hospitals, dispensaries, maternities and other medical charities, lodges, societies or clubs, free visiting physicians of boards of health and daily newspapers, vaccination by boards of health, drug store charities, free advice in newspapers, etc., shall be made under the supervision of our medical associations. These associations should appoint committees or engage persons to investigate the financial responsibility of all recipients of charity and collect accordingly. These sums to be applied to a general fund, which should be devoted to the assistance of needy practitioners.

2. The duration of medical appointments in institutions to be so regulated that all applicants shall have equal opportunities to serve.

3. Charitable medical institutions should not have the power to make rules prohibitive as regards the profession in general or to employ offensive officers in their buildings.

4. Directors have no right to be overbearing toward attending physicians.

5. Physicians in hospitals or dispensaries, professors, lecturers and instructors should avoid making derogatory statements concerning other physicians.

6. There is a too prevalent disregard of our code of ethics. If members were disciplined for slight offences, graver ones would be avoided.

7. Many patients, who are in moderate circumstances, but not poor, prefer the skillful attendance obtained at our modern free institutions, with their perfect appointments, to that of the young medical beginner in private practice.

8. Hospital authorities have no right to refuse a patient admission because the diagnosis was made by a physician not connected with the institution. A physician does not wish his patient's case re-diagnosed and remarked on by any but the prospective operator or chief in the institution.

9. A physician, once given an appointment for an unlimited period, should not have his office vacated without the acquiescence of our medical associations.

10. Physicians having medical appointments should not be guilty of improper practices.

11. If a patient is temporarily in financial difficulties and visits a charitable institution, it is not proper to say that he or she is "nobody's patient" for that reason.

12. Physicians should not send patients to charitable institutions unnecessarily. Many operations can just as well be done at home, with proper assistance, and had better be accepted for a smaller fee, or referred to a neighbor who will.

13. Directors of free hospitals should be prohibited from making store-to-store canvasses for the purpose of soliciting members, and incidentally to laud the virtues of their institutions and their members. Women should be prohibited from making house-to-house visits for the purpose of collecting charity for certain hospitals, and incidentally acting as solicitors for the institutions and their associated physicians.

14. Midwives should be prohibited from acting in any capacity beyond that of nurse, unless they have a complete obstetric education.

15. A physician dare not prescribe for the purpose of producing a criminal abortion; yet a druggist may sell "remedies" to his heart's content. Thousands of abortions are occurring annually.

16. Druggists sell therapeutic preparations for all ailments. When charged with prescribing, they contend that it was only for an emergency, which is legally allowable.

17. Patients with contagious disease are indiscriminately brought in contact with healthy customers in drug-store dispensaries.

18. It should be considered a breach of ethics for a physician to prescribe or recommend patent medicines, proprietary articles or drugs which have been untried in hospital or dispensary practice, or to recommend quacks or charlatans, or their remedies.

19. Physicians should not compound their own medicines or furnish tablets. These practices have a deteriorating influence.

20. Physicians should be discouraged from furnishing certificates of competence to midwives and nurses.

21. College appointments should be made solely for efficiency.

22. Association meetings should not be controlled by certain groups of members, to the exclusion of the remainder. All members should receive equal opportunities to address the meeting.

23. Associations should not devote all their energies to some professional offence affecting a few members, while ignoring the grievances of the mass of the profession.

24. The adoption of polyspecialism is not fair toward the mass of specialists. A professor on one subject should confine himself to that specialty alone.

25. "Indirect" professional advertising has been complained of.

26. The medical press should be freely accessible to the profession on all occasions and at all times.

Audi alteram partem. S. B.

The Oppenheimer Drink-cure in Bellevue Hospital and Gen. O'Beirne's Letter.

To the Editor:—Herewith is given *in extenso* the rejoinder of Charity Commissioner O'Beirne, in response to charges of collusion between the board, which he represents, and the new remedy for alcoholism.

The action of the Commissioners in this matter has been much the subject of two virulent attacks by the *Medical News* of July 18 and 24; but, after all, on cooler reflection, there does not seem to be any substantial ground for the charges made against the Commissioners. The medical profession should for once and all time, cast aside prejudices, and when a regular member of the profession, after proper testing and experimenting, offers a remedy for trial in a public hospital, before announcing it in general details to the profession at large, he should be permitted the fullest liberties in this direction. This was done in Paris, with Pasteur's attenuated virus for hydrophobia; with Roux's antitoxin serum in Charité and Koch's tuberculin in the Moabit Hospital and the Berlin Institute, for months, before its composition was revealed to the professional world. From what can be gathered from reliable and impartial sources, nothing further than this is being done at Bellevue, as the following communication from Commissioner Jas. R. O'Beirne in the *New York Herald*, July 20, clearly shows:

"The statements under caption of 'No Cure for Drink,' in your issue of to-day, are not true in point of fact. As I know the *Herald* aims to present only facts, I take occasion to say,

in correction of the article in question that, so far as it assumes to speak for the Board of Commissioners of Charities and 'the action they are to take to-day,' as to a specific for the cure of drunkenness—to 'saddle the city with several thousand dollars extra expense'—it is unfounded and unwarranted. So also is the case as to ignoring the Medical Board. The same is true as to taking the views of 'a young practitioner and Superintendent Murphy.' In making a trial of methods ascertained to be of value by a respectable practicing physician of standing in his profession, the object sought by the Board is to discover, with all proper safe-guards whether suffering humanity, in cases of misfortune and vicious habits, with apparently irresistible appetite for liquor, may not be further assisted and rescued in the domain of charity through the conscientious discharge of duty by the Board of Charities of New York city. If they can save the drunkard, the morphin fiend and the poor unfortunate conspiring against his own safety and that of the community, they believe it is their duty to do it, and that the charitable public of New York will approve it and rejoice if it shall be demonstrated a success. It is worth trying, at least, and, believing this to be their duty, they have acted accordingly, but do not think 'there is no cure for drink.' So far encouragement to warrant a reasonable doubt, without any expenditure of money. It is a misrepresentation to say that 'the Commissioners paid certain patients to undergo the treatment without expressing any opinion on the merits of the 'cure' as not one cent has been paid to any one by the Commissioners in connection with it, and the investigation as to its character and effectiveness having been assigned to me by the Board, it becomes imperative that I should make this denial. It will perhaps take months before a final conclusion will be reached in this investigation, which will be thorough, fearless and honest, but the result will be duly given to the public. [Signed] JAS. R. O'BEIRNE,
Commissioner of Charities, New York.

General O'Beirne, whom I am sure you know personally, is a high minded and scholarly gentleman, incapable of a mean act. Faithfully yours, JUSTITIA.

Test for Albumin.

TRAVERSE CITY, MICH., July 28, 1896.

To the Editor:—On page 1094 of our JOURNAL of May 30, 1896, I find a test for the detection of albumin in urine. The reagent suggested contains sodium hypochlorite, a compound known only in solution, and one that I believe can not be obtained for use as indicated in the formula. If you know of any way of preparing the reagent, will you be kind enough to tell me how it is done? Yours very truly,

GUY L. NOYES, M.D.

Resigned his Editorship.

CHICAGO, Aug. 1, 1896.

To the Editor:—Will you kindly notify your readers that in consequence of the intrusion of nostrum advertisements by the publishers on the *Medical Standard*, the attempt to convert this journal into a write up organ for nostrums and allied performances, I have severed my connection therewith after an editorial service of nearly ten years.

Very sincerely, JAS. G. KIERNAN, M.D.

We are sorry to see that our valiant colleague has been crowded out, but we hope to have an occasional article from his trenchant pen in our JOURNAL.—ED.

PUBLIC HEALTH.

Illinois State Board of Health.—Governor Altgeld has accepted the resignation of Dr. William E. Quine of Chicago as member of the Illinois State Board of Health, and appointed Dr. Edgar P. Cook of Mendota to the vacancy.

Special Tuberculosis Committee.—The New York State Board of Health at its meeting in Jamestown July 13 appointed two of its members, the Hon. Owen Cassidy of Montour Falls and Dr. Frederick W. Smith of Syracuse, a special tuberculosis committee

Double Entente.—"Mike," said the superintendent, "there is a dead dog reported in the alley between Illinois and Meridian streets. I want you to look after its disposition." An hour later the intelligent officer telephoned: "I have inquired about the dog, and find that he had a very savage disposition." —*Indianapolis Journal.*

Delaware County (Pa.) League of Health Boards.—The call which has been issued for a meeting at Chester July 16, of the various boards of health of Delaware County, was liberally responded to. An organization was effected to promote sociality and the interchange of views on sanitation. Dr. Isaac Crowther of Chester was elected president, Dr. D. M. McMaster of Ridley Park vice-president, and W. H. Flaville of Chester secretary and treasurer.

The Monongahela Valley.—The Monongahela valley of Pennsylvania is a complete wreck from Pittsburg to the head waters of the Monongahela River. All kinds of crops have been swept away, fences and outbuildings destroyed and scores of cattle and stock drowned. Fruit trees were blown bare and thousands of acres of oats, corn, etc., destroyed. To make the matter worse the contents of vaults have been swept over the low lands and will breed disease. Half-ripened fruit and all kinds of vegetables line the river banks. It is reported that the assistance of the State Board of Health will be asked to destroy decomposing matter.

The Navy to Assist in Florida Quarantine.—Governor Mitchell of Florida has appealed to the Navy Department for help in protecting his State against the introduction of smallpox from Cuba, where the disease is reported to be raging. Secretary Herbert has accordingly telegraphed instructions to Captain Crowninshield of the *Maine*, now at Key West, to aid the local health authorities in the work of boarding steamers and passing upon bills of health. The *Maine* will not long be kept at this work, as orders have been given to the cruiser *Montgomery*, now at Tompkinsville, S. I., detaching her from Admiral Bunce's squadron and sending her to Key West to take the *Maine's* place in looking after filibustering expeditions and enforcing observance of quarantine regulations.

Ophthalmia Neonatorum in South Carolina.—In the above-named State the following enactment was adopted and became law on Feb. 25, 1896, and is applicable to all towns having a population of one thousand or more: "Be it enacted by the General Assembly of the State of South Carolina, that should one or both eyes of an infant become reddened or inflamed at any time after birth, it shall be the duty of the midwife or nurse or person having charge of said infant to report the condition of the eyes at once to the local board of health of the city or town in which the parents of the infant reside; that the Secretary of State shall cause a sufficient number of copies of this act to be printed, and supply the same to health officers and health committees, whose duty it shall be to furnish a copy to each person who is known to act as midwife or nurse in the cities or towns for which they have been appointed; any failure to comply with the provisions of this act shall be punishable by a fine not to exceed $25 or imprisonment not to exceed one month, or both."

Advice to Inmates of Public Institutions.—Dr. John Morris, one of the Board of Managers of the Maryland Prisoners' Aid Association, has prepared a circular of advice to the inmates of public institutions, 3,000 copies of which have been printed and one placed in every prisoner's cell in the State, including reformatories male and female. The circular urges upon all prisoners the necessity for cleanliness, moderation in diet, and, above all, the avoidance of the practice of self-pollution. For cure of the habit it recommends cleanliness of the body, simple food, hard beds, abundance of fresh air and, more important than all else, occupation of mind in some elevating study or pursuit. Directions for the prevention and cure of many minor ailments to which persons in confinement are subject,

are given. Attention to the advice contained in the circular would add much to the bodily comfort and mental tranquility of the prisoners.

Staff of the German Hospital, Chicago.—The following are the names of the members of the new medical staff: Surgery—Christian Fenger, William Hessert, Weller Van Hook, E. H. Lee, Truman W. Miller consulting surgeon. Medicine—Gustav Fütterer, F. W. Rohr, J. H. Hoelscher, Otto T. Freer, Gustav Hessert consulting physician. Gynecology—Fernand Henrotin, William Doepp, Albert Goldspohn, Paul R. Welcker. Ophthalmology—H. C. Welcker, F. C. Harnish, Boerne Bettmann consulting ophthalmologist. Laryngology and Rhinology—Otto T. Freer. Obstetrics—P. R. Welcker.

Sanitary Plumbing for Toledo, Ohio.—Steps were taken at the special meeting of the health board July 23, which will result in a revolution in Toledo plumbing, sewerage and ventilation. A new board was created, which will look after all plumbing and see that it is done in accordance with the best sanitary precautions. A new inspectorship of plumbing was made and will be filled at an early date. The last Legislature provided for the creation of a board of plumbing directors, whose duty it is to examine all plumbers engaged in business in the city. The examination is to be conducted upon the lines of qualification in sanitary work and house ventilation. An inspector of plumbing is also to be appointed under the law, whose duty is to examine all work under construction and report violations of the plumbing ordinances to the board of health. He is supreme in his position, and no work can be done, except in repairs of leaks, without his permission. A penalty of from $5 to $50 is provided for all violations of the regulations, and a plumber's license can be revoked at any time for good cause.

Prevention and Cure of Seasickness.—Legrix has made a study of seasickness for the last twenty-seven years and asserts that all will be exempt if they follow his directions as given below. First, as a preventive, take one or two ½ milligram pills of strychnin (arsenate, sulphate or hyposulphite) every fifteen minutes for an hour before the boat starts, five to ten pills in all, and lie down. At the slightest symptom of uneasiness take every fifteen minutes the following combination: One strychnin pill as above, with two pills of ¼ milligram hyosciamin extractive and one pill of 1 milligram morphin (hydrobromate or hydroiodate). Twenty doses of this triple combination can be taken if necessary without danger. To establish the cure, take at night three 1 centigram podophyllin pills, with the triple combination above three times a day, for three or four days. Keep the horizontal position as much as possible; remain on deck in the open air; avoid pastry, acid candies and liquids. Brucin can be substituted for the strychnin in the case of children from 4 to 7 years, given every half hour, with no morphin and the hyosciamin pills only three or four times a day. Calomel should replace the podophyllin.—Address at the Tunis Congress of the French A. A. S., April.

Differentiation of Pathogenic Bacteria in Suspected Waters.—Besson states that the difficulties so often experienced in locating pathogenic bacteria in waters supposed to contain them, are due to the presence of other interfering bacteria, which prevent their development, as the development of the cholera bacillus is retarded by the presence of certain other bacteria in the intestines and in cultures. In analyzing water this fact is of supreme importance, as the preventing bacteria conceal the presence of the pathogenic microbes. Cultures of waters near Tunis developed constantly and exclusively a red coccus, resembling the micrococcus prodigiosus, which produced trimethylamin and was fatal to rats and guinea pigs. But persevering with another medium, Metchnikoff's gelo-pepto-salt medium, at 100 degrees, three passages resulted in pure cultures of an unmistakable bacillus pyocyaneus, which never showed at all on the plate cultures. Further investigation disclosed the prevalence of this bacillus everywhere around Tunis, which may explain the fact that this region has always been exempt from cholera although hygienic conditions certainly invite it, as Kitasato and Metchnikoff have stated that its presence retards the development of the cholera bacillus. Besson urges the adoption of Metchnikoff's medium in the analysis of waters; it retards the growth of saprophytes until the pathogenic bacteria have had time to develop. He also commended Elsner's method of differentiating typhoid bacilli as a valuable aid in analyzing waters. (See JOURNAL, March 7, page 493.)—From address at the Tunis Congress of the French, A. A. S.

The Health of New York State in June.—The *Bulletin* of the State Board of Health of New York reports the following statistics for the month of June, 1896: The reported mortality for the month is 200 less than that of the preceding month, but is 600 greater than that of June, 1895. The death rate for the month was 16.85, against 17.50 in May and 19.30 in April, that of June 1895, having been 16.10. The customary decrease in the mortality is less than usual, the average daily mortality for the month being in fact greater than in May, 311 against 308, that for June the past ten years having been 285. Of the 9,342 deaths 37.0 per cent. occurred under the age of 5 years, and 18.3 per cent. were from zymotic diseases. More than half of the deaths of this class, and nearly 10 per cent. of the total mortality were from diarrheal diseases. The diarrheal mortality of June is very variable, some years the number being less than 500 and others over 1,000, because of the varying earliness of commencement of the summer increase. This month there were 900 deaths, or about 250 more than the average. In the Maritime district 12.5 per cent. of the total mortality was from this cause, and in the Lake Ontario and Western districts 9.0 per cent., but in the more rural parts of the State it constituted but from 2.0 to 4.0 per cent. of the total mortality. From all other zymotic diseases respectively there were fewer deaths than in May. From consumption there were 1,100 deaths, which is above the average for the month. Acute respiratory diseases decreased one-half from May, a saving of 600 in the number of deaths, less than 10 per cent. of the total mortality being from this cause against 15.5 per cent. in May. There is an increase in the reported mortality from diseases of the digestive system, which always varies with the diarrheal mortality. Deaths from all other local diseases are less than in May. Next to November, June is the healthiest month of the year in this State. The average mean barometer was 29.96, the relative humidity 71 per cent. and the average temperature for the entire State 69 degrees, or 2 degrees above the normal; there was an average rainfall of 3 inches, a slight deficiency. The prevailing wind was southwest.

Health Report.—The following health reports have been received in the office of the Supervising Surgeon-General, Marine-Hospital Service:

SMALLPOX—FOREIGN.

Barcelona, June 1 to 30, 35 deaths.
Bombay, June 23 to 30, 13 deaths.
Buda-Pesth, July 8 to 15, 2 cases.
Calcutta, June 13 to 20, 1 case.
Callao, June 28 to July 5, 10 cases.
Genoa, July 11 to 18, 1 case.
Havanna, July 9 to 16, 23 deaths.
Licata, July 4 to 11, 4 deaths.
Madras, June 19 to 26, 3 deaths.
Odessa, July 4 to 11, 11 cases, 3 deaths.
St. Petersburg, July 4 to 11, 14 cases, 4 deaths.
Warsaw, June 27 to July 4, 2 deaths.
Yokohama, June 19 to 26, 2 cases, 1 death.

CHOLERA.

Bombay, June 23 to 30, 19 deaths.
Calcutta, June 13 to 20, 29 deaths.

YELLOW FEVER.

Acapulco, July 11 to 18, 1 case.
Havanna, July 9 to 23, 115 cases, 46 deaths.
Matanzas, July 15 to 22, 100 cases, 54 deaths.
Sagua la Grande, July 11 to 18, 65 cases, 8 deaths.

NOTE.—The report of 7 deaths each in Warsaw and St. Petersburg from yellow fever, in last week's JOURNAL, should read 7 deaths each from smallpox.

NECROLOGY.

Surgeon Charles S. D. Fessenden, United States Marine Hospital Service died at Salem, Mass., July 23, aged 68. He was a great-grandson of the Rev. William Fessenden, and brother of Ex-Secretary William Pitt Fessenden, of Maine. He was born in Portland, Maine, Feb. 23, 1828, was graduated from Bowdoin College in 1848, from the Brunswick medical school in 1851, and settled in Portland, where he was for three years city physician. He was appointed to the Marine Hospital Service in 1861, and served at Portland, New York, Louisville and Mobile. In November 1895, he was placed on waiting orders on account of physical disability. Although not a frequent contributor to medical literature he possessed great ability in his profession, as an able operator and a profound scholar. He was greatly beloved by his fellow officers who deeply regret his loss. He was for many years a member of this Association.

Frank Whitman Ring, M.D., of New York city, died July 17, in New Haven, Conn., at the home of his brother, Dr. Henry Wilson Ring, where he had been ill for nearly three months. Dr. Ring was born in Portland, Me., August 28, 1848. He graduated from Bowdoin College in the class of 1869, and from the Medical Department in 1878. He subsequently continued his medical studies in Paris and London, returning to New York city in 1883. He has since been well known as a most proficient eye and ear specialist. At the time of his death he was the Executive Surgeon of the Manhattan Eye and Ear Hospital of New York city, a member of the American Ophthalmological and Otological Societies, the New York Ophthalmological Society, a Fellow of the New York Academy of Medicine and a member of the New York County Medical Society. He was the author of several important professional pamphlets relative to his specialties.

A. C. Mackenzie, M.D. (Long Island College Hospital, Brooklyn, N. Y., 1868), of Negaunee, at Marquette, Mich, July 13.——N. N. Patton, M.D. (Jefferson Medical College, Philadelphia, 1873) at Monongahela City, Pa., of Bright's disease, July 14, aged 50 years.——Phillip G. Corkins, M.D. (Rush Medical College, Chicago, 1853) at Harwood, Mo. July 16, aged 70 years.——W. B. McPheters, M.D. (Medical Department of Western Reserve University, Columbus, 1870), at Hookstown, Pa., July 20, aged 45 years.——G. M. Roberts, M.D. (Hospital College of Medicine, Louisville, 1880) at Union Center, July 25.——W. W. Walters, M.D. (Pennsylvania Medical College, Philadelphia, 1853) at Johnstown, Pa. July 23, aged 73 years.——J. M. Benedict, M.D. (University of the City of New York Medical Department, 1867) at Salt Lake City, Utah, July 24, aged 52 years.——John D. Dillon, M.D. (Jefferson Medical College, Philadelphia, 1878), at Philadelphia, July 28, aged 40 years.

Wm. Rose, M.D., aged 49 years, July 26, of apoplexy, at Columbia, Ill. He was born in Germany, where he received his early education. At the age of 17 years he came to this country. After graduating from the College of Physicians and Surgeons at Keokuk, Iowa, in 1878, he located in Columbia, where he practiced up to the time of his death.

Cub. Isaacs, M.D., aged 40, a well known physician and politician, died at his home at Flat Fork, near Saylersville, Ky., of general debility. He had been blind for several years and was confined to his room; his condition not improving he became despondent and his failure was rapid.

Simeon H. Pearce, M.D., died at Friendship, N. Y., July 16, aged 66 years. He graduated from the Medical College of Castelton, Vt., in 1854. Has been a resident of Mt. Vernon, Ind., and in active practice of his profession since 1859. He was a member of the American Medical Association since 1875. Member of Indiana State Med. Association, Secretary of the Posey County Board of Health, and member of the Pension Examining Board, and Posey County Med. Association from its organization. He had gone East for his health.

SOCIETY NEWS.

Mississippi Valley Medical Association.—St. Louis, July 30, 1896. *To the Editor:*—I desire to announce that the date of the meeting of the Mississippi Valley Medical Association has been changed to September 15, 16, 17 and 18, in order to permit the members and their families to take the opportunity accorded by this change to make a pleasant tour through the Yellowstone Park, so justly celebrated as the Wonderland of America. Prominent resident members of our Association in St. Paul and Minneapolis are formulating plans for the Special Yellowstone Park Excursion Trip, to leave on the evening of September 18, arriving in Mammoth Hot Springs in the Yellowstone Park about noon on the following Sunday, and devoting the following five days to the wonders of this remarkable region, returning to St. Paul Sunday, September 27. The cost of the trip, including all expenses west of St. Paul, will be announced in due season, but we are authorized to say that the figure will be a very favorable one, and we simply wish at this time to make the preliminary announcement of this most enjoyable feature of the St. Paul meeting, so as to give members the opportunity of making their plans in advance to join the party. It is desirable that there be a party of one hundred or more, in order to obtain the benefit of the special train service in both directions. It is urged that all members who desire to join the party should send their names to Dr. C. A. Wheaton, Chairman of the Committee of Arrangements, St. Paul, at as early a date as possible. If you desire to read a paper before the meeting, please send to me the title at once. Very truly yours, Hanau W. Loeb, Secretary.

The Upper Peninsular (Mich.) Medical Association.—This society held its first meeting at Marquette on July 20. Physicians from all parts of the peninsula were present. The election of officers held in the afternoon resulted as follows: President, Dr. J. Vandeventer, Ishpeming; Vice-President, Dr. O'Keefe, Menominee; Treasurer, Dr. B. D. Harison, Sault Ste. Marie; Secretary, Dr. H. J. Hornbogen, Marquette; Committee on Organization, Drs. O. G. Youngquist, O'Keefe, Felch, Harison, Crowell.

MISCELLANY.

Yale's Oldest Medical Graduate.—Dr. Chauncey Ayer of Stamford, Conn., is said to be the oldest living graduate of the Yale medical school. He was a member of the class of 1831, and was born in 1808.

Insane Asylum Appointment.—Dr. C. T. Simpson, superintendent of the lunatic asylum located in Austin, Texas, tendered his resignation July 25, to take effect August 1 or as soon as his successor could be appointed. The Doctor leaves to take charge of the insane asylum of Oklahoma.

Kentucky School of Medicine.—A number of changes were made in the faculty July 28. The chair of anatomy was divided between C. W. Kelly and W. Ed Grant. Louis Frank was elected to the chair of clinical and operative gynecology; Henry E. Tuley, professor of obstetrics and also obstetrician to the Kentucky School of Medicine hospital; Carl Weidner to the chair of physiology. The chair of the practice of medicine was divided by the appointment of Ewing Marshall as professor of physical diagnosis. The chair of clinical ophthalmology, laryngology and otology will be filled by Thos. C. Evans.

An Honest Newspaper.—In a recent issue of the *Post*, published in Fort Dodge, Iowa, the editor of that paper declares that its advertisement pages can not hereafter be used by traveling doctors and medical fakirs. He says: "The *Post*, while not holding itself responsible for its advertising columns,

does feel this to be true, that it owes to the public who read it a duty, especially relating to advertising traveling doctors and medical fakirs, for the reason that no one is so liable to be imposed upon as a person in search of health, and such a one is deserving of the utmost good faith upon the part of every professional man who is called upon for advice or treatment. This, we are convinced, they are not apt to receive from the hands of traveling doctors and medical fakirs. In the future the advertisement of no such person will appear in the *Post* while it appears under its present management."—*Am. Med. Surg. Bulletin.*

Dr. Henry T. Byford of Chicago has gone to Geneva, Switzerland, to attend the International Congress of Gynecology and Obstetrics.

Pregnancy Following Salpingo-oophorectomy.—Dr. S. C. Gordon reports the following case: "March, 1894, I removed both ovaries and tubes from Mrs. R., aged 33, and so far as I know there were no fragments of the ovaries left; each was much enlarged and flabby, that on the right side being two and one-half inches long. She recovered promptly, but menstruated regularly each month after two or three months. In June, 1895, she became pregnant. The period of gestation was marked by no peculiar symptoms, and she was delivered of a healthy child March 12, 1896. In this case there must have been some stroma of ovarian tissue left, but the question of interest is, by what means did the ovum reach the uterine cavity? The only explanation is that the tube, after being ligated, must have opened at the stump, thus allowing it to pass through. I have seen the lumen of a varicose vein resume its normal caliber after having been ligated with catgut—absorption having taken place before the coats were destroyed. I presume the same may occur in the Fallopian tube."—*Jour. of Med. and Science*, July.

Deciduoma Malignum.—The Vienna letter to the London *Lancet*, July 11 contains the following note on Saenger's disease: At a meeting of the Vienna Medical Society Dr. Neumann read a paper on deciduoma malignum, a disease which was first described by Saenger in 1882. As a rule it occurs after delivery, abortion or cystic mole, and it may sometimes be observed even in childbed. It is characterized by obstinate hemorrhage which renders the sufferers too weak and anemic to undergo an operation. Metastatic deposits are formed in the vagina and lungs; in the latter case there is hemoptysis which may cause death by asphyxia. The initial symptoms are hemorrhage associated with enlargement and softening of the uterus; the disease may be distinguished from cystic mole by microscopic examination of portions removed by curetting. The general form of the tumor is like that of a polypus, its tissue has a reddish-gray color and shows hemorrhages, and in growth it resembles sarcoma.

Lumbar Puncture of the Subarachnoid Space.—Dr. A. H. Wentworth summarizes the results of some experimental work as follows: 1. The normal cerebro-spinal fluid contains neither cells nor fibrin, and is perfectly clear. 2. In cases of meningitis the cerebro-spinal fluid is invariably cloudy when withdrawn. The degree of cloudiness is to some extent proportionate to the amount and character of the exudation in the meninges. 3. The cloudiness is caused by cells. The character of these differs with the variety of the meningitis. After withdrawal, more or less fibrin is formed in the fluid. The presence of these cells and fibrin is pathognomonic of inflammation in the meninges. 4. The cloudiness is oftentimes so slight that close observation is necessary to detect it. 5. The operation is not difficult to perform on infants and children. It is not dangerous, if strict cleanliness is observed. 6. The differential diagnosis between the various kinds of meningitis can be made by microscopic examination of the sediment, by cultures taken from the fluid and by inoculation experiments. 7. Inoculation experiments afford the surest means of determining tubercular meningitis. It is of value to distinguish between the varieties of meningitis in order to determine if tubercular meningitis is recovered from. 8. In the normal fluid, a faint trace of albumin is usually present, about one-fiftieth of 1 per cent., or less, by quantitative analysis. In meningitis the amount of albumin is increased, and has varied from one-thirtieth to one-tenth of 1 per cent. 9. In one case a diagnosis of general infection with the staphylococcus pyogenes aureus was made from cultures taken from the cerebro-spinal fluid.—*Archives of Pediatrics*, August, 1896.

"The Vilest of Crimes Against Dr. X."—The following is an expurgated edition of the reportorial note in one of our daily contemporaries: "Dr. X. announced last fall that he had discovered a preparation which, if used in season, would in the majority of cases prove a cure for ———. He has recently discovered that the country has been flooded with spurious preparations, not only worthless, but full of danger as compared with his own. As a result of this discovery, Dr. X. has just brought suit against two prominent individuals, placing his damages in each case at many thousands of dollars, and additional suits will be brought as soon as the necessary evidence is obtained. 'This is not a question of money with me,' said the proprietor of the preparation, which for convenience may be called Assertolin, or Dogmatocin, 'for I freely published the formula, in the hope that the use of the remedy would receive the widest extension. Personally, I object to the use of my name in connection with these spurious compounds, the manufacture and sale of which is a crime of the vilest kind. I shall rigorously prosecute every person I find engaged in this infamous traffic.'" If the language applied by Dr. X. to his imitators is correctly reported, it is vigorous and pungent, to say the least. Does he really mean that the offense of which he writes is an "infamously vile crime?" Such conduct is admittedly tricky and of the nature of sharp practice, designed mainly to reduce the financial prosperity of the person imitated. The personality of the latter is indifferent to the imitators; to them Dr. X. is an unknown quantity and the name, whether that of Dr. A. or Dr. X., is chiefly valuable to them in proportion to the amount of notoriety through the press that has been previously attained.

Dry Sterilized Catgut.—Mr. Chas. Truax of Chicago has made some experiments on the tensile strength of sterilized catgut. He says: "I recently submitted specimens of catgut to the following tests: Ten pieces of German catgut, No. 6, each 6 feet in length were taken and numbered consecutively from one to ten, each being labeled at three points; at each end and in the center. These pieces were then each cut into three pieces, each 2 feet in length, resulting in three of each number. One set of sutures, those cut from the center of each piece, were then tested to ascertain their tensile strength by suspending with each a five gallon can and pouring water into the can until the suture broke. The breaking tensile strength was found to vary from 26 pounds to 32 pounds and 6 ounces, as shown by the following table:

	Raw.	Boeckmann.	Schimmelbusch.
No. 1	27 pounds	27 pounds, 12 oz.	27 pounds, 14 oz.
" 2	26 " 6 oz.	24 "	26 " 12 "
" 3	28 " 10 "	23 "	24 " 6 "
" 4	32 " 6 "	26 " 4 "	23 "
" 5	27 "	27 " 4 "	23 " 12 "
" 6	31 " 10 "	29 " 4 "	26 " 6 "
" 7	28 " 4 "	20 "	23 " 6 "
" 8	26 "	22 " 12 "	21 " 10 "
" 9	26 " 12 "	25 " 10 "	27 "
" 10	30 " 13 "	23 " 12 "	24 " 12 "
	284 13-16	249 10-16	248 14-16

"The second set of pieces were then sterilized by the Schimmelbusch process, which in brief consists in immersing the ligatures in ether for twenty-four hours, after which they were transferred to the following solution:

Corrosive sublimate	10
Absolute alcohol	300
Aqua destillata	200

where they were allowed to remain twenty-four hours, after which this solution was changed for a second lot of the same solution, and this process repeated until the catgut had successively passed through three like solutions, after which it was placed in absolute alcohol for forty-eight hours. The ten sutures were then subjected to the same test as above mentioned and the breaking tensile strength found to vary from 21 pounds and 10 ounces to 27 pounds and 14 ounces. The remaining ten pieces were subjected to the Boeckmann-Benckisser system of dry heat sterilization, after which the breaking tensile strength was found to vary from 20 pounds to 29 pounds and 4 ounces. It will be seen by consulting the above table that the combined weight sustained by the ten raw sutures was 284 13–16 pounds, or an average of about 28 5–10 pounds each. The ten sterilized by the Schimmelbusch process was 248 14–16 pounds, or nearly an average of 24 9–10 pounds each, while that subjected to the Boeckmann-Benckisser process was 249 10–16 pounds, or nearly an average of 25 pounds each. It is evident from this single experiment that the difference resulting from the use of the Schimmelbusch and Boeckmann-Benckisser systems is practically nothing, as a little variation in a single suture might have resulted in one or the other showing a slight advantage. It requires but little argument to demonstrate the superiority of the dry heat system. As the sutures require no vessels or containers in which to preserve them they can be stored or transported in a small space. Sealed in small sterilized envelopes they may be kept indefinitely without danger of infection. As no expensive chemicals are necessary either in the process of sterilization or storage the cost of preparation is reduced to a minimum. No expensive containers are required and no danger of loss by breaking of containers and spilling of contents is incurred in transportation. We trust that surgeons generally may be induced to make similar tests and satisfy themselves, for if these statements are verified by further actual tests and laboratory experiments still continue to demonstrate that catgut prepared by the Boeckmann-Benckisser method is surgically sterile the surgeon will have to exempt the catgut from blame if infection takes place."

Baltimore.

Dr. Edward N. Brush, Superintendent of the Sheppard Asylum of this city, has been elected professor of psychiatry in the Woman's Medical College of Baltimore.

Indianapolis.

Dr. Joseph R. Eastman of Indianapolis, the son of Dr. Joseph Eastman, has passed the examination at Berlin University, Germany, and received "Magna Cum Laude."

Cincinnati.

The Health Report for the week shows 132 deaths from all causes; annual rate per 1000, 19.61; below the age of 5 years 47; preceding week 111; corresponding week 1895, 114; 1894, 154; 1893, 108.

Dr. Charles A. L. Reed announces that the Mexican Central Railroad has made a single fare for the round trip to the Second Pan-American Medical Congress. It is expected that the American lines will make the same rate.

The Board of Medical Examiners have rejected one-third of the midwives who have applied for a license to practice. They have also notified a colored man by the name of Porter, who has been practicing medicine, that he must leave the State.

Dr. J. B. Barker of Piqua, Ohio, has been appointed U. S. Pension Examiner in his district.

An advertising specialist of Cincinnati, Dr. W. I. Kelley, has been arrested and fined $50 by the Kentucky courts upon a warrant sworn out by Dr. J. M. Mathews of Louisville, the President of the State Board of Health, charging him with practicing medicine without a State license. It is alleged that Dr. Kelley applied for a license which was refused him. The Hon. W. C. P. Breckenridge defended him and he has given notice of an appeal.

Mrs. Annie Florein has again appeared in the coroner's court as a result of an alleged suspicious death occurring at her establishment. In this instance she presents the evidence of a young practitioner who attended the case and who denies any grounds for suspicion regarding the infant's death. The State Board of Examiners are somewhat handicapped in any attempt at prosecution in this case for the reason that Mrs. Florein claims that she does not practice medicine and therefore can not be governed by the Board. It is a particularly unfortunate matter that she can call to her assistance regular members of the profession to attend cases in which a fatal termination is expected, and then be able to present the physician's certificate as evidence of the fact that she is not practicing medicine.

A case of unusual interest to the neurologist and pathologist developed last week through a postmortem held on a man who had fallen out of a window and sustained a fracture of the frontal and occipital bones. An extensive adhesion of the dura and pia mater was found at the top of the brain and a suit for heavy damages is anticipated, as it is claimed that the diseased condition of the brain was responsible for the fall and that in turn the diseased condition was the result of an injury he received on the head some six months ago while working in a freight car at which time a quantity of ice fell upon him, an engine having forcibly struck the car.

Dr. E. W. Walker is again on duty after a serious illness.

Philadelphia.

Death of Infant from Accidental Administration of Strychnia.—The danger of careless handling of medicine in the household was illustrated by a case investigated recently by the coroner, in which a fatal result in a colored child of 21 months was caused by eating some tablets administered by an older child who had taken them down from the mantel-piece. It was ascertained that they contained strychnin, which had been prescribed for the child's mother. A physician was brought in immediately, but was unable to save the child's life.

The Jewish Maternity Association of Philadelphia has greatly extended its usefulness by opening a Jewish seaside home for invalids at Atlantic City, the institution being now in its fourth season. Accommodations are also provided for sick infants and crippled children. It is purely charitable and no expense is borne by the patients. Dr. Boardman Reed of Atlantic City is the consultant and Drs. A. D. Cascaden and L. R. Souder are the attending physicians.

Pollution of Water.—In the annual report of the State Board of Health, Dr. Benjamin Lee, secretary, forcibly directs attention to the importance of the prevention of the pollution of water used for drinking purposes, and the great necessity of legislation upon this subject. He says:

"The fact that, during the past year, thirty-nine complaints have been made to the board of the pollution of water supplies, only serves to emphasize the misfortune to the State of the persistent refusal of the Legislature to accede to the request of the board to give it a special appropriation which would have enabled it to make a thorough investigation into the condition of the public waters of the Commonwealth. A pure water supply is the one great desideratum for building up a healthy, vigorous community. All other questions are dwarfed by it. The board will probably remember that early in the present year a communication was addressed to it by the health officer of Louisville, Ky., calling attention to the fact that a bill had been presented in Congress providing for the appointment of a commission to inquire into the pollution of such public streams as passed from one State to another, and requesting our Board to use its influence with the representatives of Pennsylvania in the national Legislature

in favor of the measure. A communication was also received from the State Board of Health of Missouri, enclosing a resolution adopted by that board endorsing the proposed law. At the meeting of the National Conference of State Boards of Health at Lansing, two years ago, your secretary, at the request of the board, made a report upon the subject, calling attention to the necessity of an investigation by the national government in consequence of the general inertness of State governments in dealing with this important question. A resolution was adopted at that time to memorialize Congress upon the subject, and the present movement was undoubtedly due to the action then taken. On receipt of the communication the board adopted a resolution approving the bill, and a copy of the same was forwarded to each of our representatives in the national Legislature, requesting him to give the measure his support. Inasmuch as many important streams pass both into and out of our territory from and to that of other States, such an investigation pursued by the thoroughness which characterizes work undertaken under national auspices could not but prove of the greatest benefit to us."

A SENSATIONAL ROBBERY IN A HOSPITAL.—A patient who occupied a private room in the St. Joseph's Hospital had his trunk forced open by an attendant, who carried off jewelry and bonds amounting to $20,000 or more. The thief was soon afterward arrested in New York City, and with a female accomplice is now in custody. In such a case it might be asked whether there was not contributory negligence in carrying into a public institution such a large amount of valuables with such slight protection as is afforded by a trunk.

ACCIDENT TO AN AMBULANCE—A trolley car last week struck an ambulance that was taking a boy to the Jefferson College Hospital to be operated upon there for appendicitis. The rear wheel was broken and the axle bent, and the boy's father was thrown violently upon the patient, greatly increasing the gravity of the condition. The operation was done soon afterward in the hospital and the lad, who was 12 years of age, died a few hours later. The coroner decided that the death had been accelerated by the accident, but had not been caused by it.

DEATH FROM ACUTE INDIGESTION.—On one of the warm days recently a man applied for treatment at the Episcopal Hospital, stating that he had eaten a great deal of cheese and thought that might be the cause of his illness. He grew rapidly worse and died a few hours later. He was a German, 49 years of age, and it was held that he died of heat stroke and acute indigestion or gastritis, from eating cheese.

THE SAMARITAN HOSPITAL on North Broad Street, which is under the fostering care of Grace Baptist Temple, is increasing its capacity by the erection of an additional wing to be devoted to isolation purposes.

THE NEW CLINICAL AMPHITHEATER of the Medico-Chirurgical Hospital is now under roof and presents a handsome appearance.

THE MEDICO-CHIRURGICAL COLLEGE TRUSTEES, it is announced, have in contemplation the creation of a faculty for a dental department as soon as the present arrangement with the Philadelphia Dental College is dissolved, which will be at the end of the next term. For a number of years the association of the two institutions in the same buildings was mutually advantageous, but the phenomenally rapid growth of the medical school has now placed it in position to occupy the buildings for its own purposes.

A CASE OF DOUBLE PERSONALITY.—At the Philadelphia Hospital a curious case of loss of memory has excited much interest, among the neurologists especially. The patient, a young man, after four months' stay in the hospital has been recognized by Dr. E. F. Robinson of the resident hospital staff as a former college companion named Spencer. The patient, however, did not recognize Dr. Robinson nor acknowledge the name. In fact, he did not remember his name at all and could not give any when admitted into the hospital, nor could he remember anything about his previous life or explain how he came to be in Philadelphia with nothing in his possession save some pawn tickets made out in the name of George Brandt, under which name he was received into the hospital. Dr. Daniel E. Hughes, the superintendent, took great interest in the case and recently brought him before the Neurological Society. Dr. Lloyd was of the opinion that the young man might have been hypnotized. Dr. Hughes considers that it is a case of loss of personal identity, or of double personality of the Archibald Malmaison type. Mr. Spencer's home is in Lawrence, Kan., where his father resides. He was last heard of January 27 in Washington, but he can give no account of his wanderings before coming to Philadelphia. From his conversation, however, and replies to questions, Dr. Hughes believes that he has recently been in London and perhaps on the continent.

COLLEGE NEWS.—The State Board of Medical Examiners and Licensers of Pennsylvania met at Harrisburg last month, as directed by the statute creating this board, and the results have just been published. The examination comprised questions in anatomy, physiology, pathology, diagnosis, hygiene, surgery, obstetrics, chemistry, materia medica, therapeutics and practice of medicine, and requires four days to complete it. Out of a total of 381 candidates 340, or 89.24 per cent., were successful in obtaining the license to practice medicine in this State. The University of Pennsylvania sent up 48 candidates, all of whom passed the examination, and the 9 candidates sent by the Woman's College of Philadelphia were equally successful. Three out of 42 from the Medico-Chirurgical College were unable to pass, and 8 out of the 131 from the Jefferson were unsuccessful. It is proper to state that one of those rejected from the former college had failed to pass the board last year and had not attended lectures in the interval. The West Pennsylvania Medical College of Pittsburg was represented by 81 candidates, of whom 62 passed. There were 16 from the College of Physicians and Surgeons of Baltimore, of whom only one failed to obtain the license. Among the names of the successful candidates is that of Horation C. Wood, Jr.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from July 25 to July 31, 1896.

Major Henry McElderry, Surgeon (Ft. Robinson, Neb.), is granted leave of absence for one month, to take effect on or about Aug. 3, 1896.

First Lieut. Isaac P. Ware, Asst. Surgeon (Madision Bks., N. Y.), is granted leave of absence for three months, on surgeon's certificate of disability.

Capt. George E. Bushnell, Asst. Surgeon, is relieved from duty at Ft. Hamilton, N. Y., to take effect upon the expiration of his present leave of absence, and ordered to Ft. Assiniboine, Mont., for duty at that station, relieving Capt. Peter R. Egan, Asst. Surgeon. Capt. Egan, upon being thus relieved, is ordered to Ft. Hamilton, N. Y., for duty.

Change of Address.

Dvorak, W. J., from 1620 to 1541 W. 22d St., Chicago.
Judson, A. B., from 25 to 1 Madison Av., New York, N. Y.
Kaumheimer, G., from 910 to 508 3d st., Milwaukee, Wis.
Lawrence, G. H., from Chicago to 6 and 7 Kittredge Bldg., Denver, Colo.
Morrall, G. W., from Barnwell to Millettville, S. C.
Martens, E. J., from St. Louis to Forsyth Junction, Mo.
McMahan, C. Agnes, from Chicago Beach Hotel to 2970 Indiana Av., Chicago.
McDaniel, E. B., from Cove to Rooms 306 and 307 Dekum Bldg., Portland, Ore.
Oglesby, C. R., from Pensacola, Fla., to Kirkwood, Mo.
Potts, J. S., from Los Angeles to San Jose, Cal.
Percy, J. F., Galesburg, Ill., to Mantorville, Minn.
Synon, G. C., from Cedar Rapids, Iowa, to 1557 W. Harrison St., Chicago, Ill.

LETTERS RECEIVED.

Arters, J. D., Oil City, Pa.; Alma Sanitarium Co., Alma, Mich.
Burr, C. B. (2), Flint, Mich.; Battle Creek Sanitarium, Battle Creek, Mich.; Beiser Mfg. Co., The, Brooklyn, N. Y.,; Borck, Edward, St. Louis, Mo.; Butterworth, Alice, Chicago; Berry, H. A., Oswego, Ill.; Boehringer, C. F. & Soehne, New York, N. Y.
Caldwell, J. R., St. Clairville, Ohio; Colvin, D., Clyde, N. Y.; Chambers, J. H. & Co., St. Louis, Mo.; Chesman, Nelson & Co., St. Louis, Mo.
Drevet Mfg. Co., New York, N. Y.; Dvorak, W. J., Chicago; Doliber-Goodale & Co., Boston, Mass.
Gaston, J. McFadden, Jr., Atlanta, Ga.; Guthrie, F. A., Aledo, Ill.
Haldenstein, I., New York, N. Y.; Hummel, A. L., Adv. Agency (5), New York, N. Y.
Ingals, E. F., Chicago.
Kiernan, James G., Chicago.
Lawrence, G. H., Denver, Colo.; Leresche, E. P., Chicago.
Morse, Edward E., Washington, D. C.; Macmillan Co., The, New York, N. Y.; Maltine Mfg. Co., New York, N. Y.; Manley, Thos. H., New York, N. Y.; Marchand, Chas., New York, N. Y.; McDaniel, E. D. (3), Milton, Fla.
Rabuck, S. H., Lyle, Minn.
Small, Edward H., Pittsburg, Pa.; Stirling, A. W., Atlanta, Ga.; Smith, W. H. C., Lincoln, Ill.; Smith, H. F., New Troy, Mich.; Strong, B. F., Howard, Kan.
Tyree, J. S., Washington, D. C.; Truax, Chas. Greene & Co., Chicago.
Von Koerber, P. E., Loup City, Neb.; Van Cleve, A. H., El Paso, Texas.
Wathen, W. H., Louisville, Ky.; Walsh, Ralph, Washington, D. C.; Wood, Casey A., Chicago.